DOCUMENT RESUME

ED 204 985 EC 133 556

AUTHOR Orloff, Jeffrey H., Ed.
TITLE Our Gifted: Our Future. Proceedings of the Annual Northern Virginia Conference on Gifted/Talented Education (5th, Alexandria, VA, March 7-8, 1980).
INSTITUTION Northern Virginia Council for Gifted/Talented Education, Falls Church.
PUB DATE Mar 81
NOTE 135p.

EDRS PRICE MF01/PC06 Plus Postage.
DESCRIPTORS Administrator Role; *Class Activities; Creativity; Elementary Secondary Education; Futures (of Society); *Gifted; Leadership Training; Student Characteristics; *Teaching Methods
IDENTIFIERS Gifted Disadvantaged

ABSTRACT

The document contains 13 selected papers from a conference on working with gifted students. Titles and authors include the following: "A Metacurriculum for the Future" (B. Hubbard); "Building a Curriculum to Train Leadership Abilities" (L. Addison); "Gifted Boys, Gifted Girls--What's the Difference" (B. Becker); "Why Don't We Practice What We Teach?" (H. Clark); "Futurism--A Prediction for the Gifted Person" (J. Brunsell); "Human Creativity--Competitively or Cooperatively, Alone or Together" (W. Poweton); "Gifted/Talented Passports--Helping Our Children Adjust to the Experience of Moving" (K. O'Beirne); "The Principal--Catalyst or Roadblock?" (J. Webb); "Differential Education for the Gifted/Symbology--A Fundamental Approach to the Study of the Future" (R. Adams); "Working with the Special Personalities of Gifted Adolescents" (L. Kaplan); "Motivating the Gifted to Want to Learn" (M. Rourke); "Success for the Gifted Child in the Regular Classroom" (B. Monroe); and "Survival Skills for the Disadvantaged Gifted" (F. Robinson, V. Oliphant). Presented among papers are sheets for classroom activities based on Guilford's Structure of Intellect model, a chart on the characteristics of gifted adolescents and possible outcomes, and a checklist of gifted characteristics. (SB)

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Proceedings of the Fifth Annual Northern Virginia Conference on Gifted / Talented Education

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EC133556

March 7–8, 1980
T. C. Williams High School
3330 King Street (Route 7), Alexandria, VA

Edited by
Jeffrey H. Orloff

NORTHERN VIRGINIA COUNCIL FOR GIFTED / TALENTED EDUCATION
P.O. BOX 705, FALLS CHURCH, VIRGINIA 22046

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Library of Congress Catalog Card Number: 81-51079

This book is included in The ERIC Clearinghouse on Handicapped and Gifted Children.

Printed in the United States of America

March, 1981

DEDICATION

. . . To the future, and the role
our gifted youth will play in it.

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ACKNOWLEDGEMENTS

For their dedication and hard work, I would like to acknowledge the following people for their help in making the Fifth Annual Northern Virginia Conference on Gifted / Talented Education the huge success it was.

Rebecca C. Adams
Linda Addison
Susan D. Allan
Rosalie Arnold
Lynn Asmuth
Martin Aylesworth
Lisa Barker
Nancy B. Beach
Hon. Charles E. Beatley
Jerry Beatty
Bonnie Becker
Marty Behr
R. G. Beau Bentley
Pastsy Baker Blackshear
Cathy Boehling
William C. Bosher
Darlene Boyd
John L Bristol
Agnes M. Brown
Ned Browning
Joyce L. Brunsell
Joan Byrne
Carolyn M. Callahan
Marie C. Canny
James H. Cantrell
Linda Cantrell
Jody Carlisle
Mary Claiborne
Ann Clark
Hester Clark
Joyce Coleman
Lee Coleman
Esther Cook
Judith Cook
Dodie Corpening
Anne B. Crabbe
Pat Cusey
Mary Beth Day
Arletta L. Dimberg
Geraid E. Einem
Gerri Eisenstein
Donna K. Fox
Lyn Fox
Dave Garber
Mary Sue Garner
Christine N. Garrison
Rebecca Garrity
William C. George
Jacob Getzels
Lillie Gilbert
Barbara Given
Nedra Harkavy
Ruth L. Harris
Janie Heard
Richard Hills
Phyllis D. Hines
Glen A. Holmes
Cheryl Homatidis
Donald W. Hyatt
Yvonne Hylton
Melanie Jackson
Yvonne Jackson
Karen Jameson
George Johnson
Jay Johnson
Frances Jones
Sister Mary Ann Jose, SND
Leslie S. Kaplan
Vincent F. Kashuda
Ann Koprowicz
Doris Larson
Marie Lauducci
Daniel Leong
Linda Lew
Rhea Lindstrom
Nancy Lyon
Ginny MacReynolds
Beverly Magsamen
Robert A. Magoon
Bobbi Marchant
Karen M. Marco
Barbara Marx-Hubbard
Gilbert Mays
Nancy McNamara
Beverly G. Monroe
Barbara-Lyn Morris
Cate Mueller
Roberta New
Kathleen P. O'Beirne
May Ohman
V. Susie Oliphant
Marjorie B. Orloff
John Page
Martha Powell
Rob Remington
Dianna Richardson
Wyatt Rider
Judy Rierson
Frances Robinson
Linda Rothrock
Marty Rourke
Patrick W. Rourke
William E. Roweton
Janet Sarcione
Robert Scarborough
Tom Scott
Marlee Simmons
Betty H. Simms
Al Sowards
Janice S. Spencer
Marion Spraggins
Margaret Stanley
Ann Marie Stewart
Betty Jo Stockton
Constance Sullivan
Mary Lee Tatum
Pati Terry
Carol Tomlinson
Larry Trice
Anne Vaden
Peggy Vanco
Claire Wamsley
Helen Ward
Susan Warner
June Q. Webb
Joseph White
James H. Williams
Janet Wright
Selma Ziff

Special thanks to: The Alexandria City School Board and the staff at T. C. Williams High School for hosting this year's conference.

Bonnie Whiting for her assistance in the typing of this manuscript and Valiant Art Services, Inc. for their creative artwork.

J.H.O.

INTRODUCTION

"Our Gifted, Our Future" contains selected papers from the Fifth Annual Northern Virginia Conference on Gifted / Talented Education held in Alexandria, Virginia on March 7–8, 1980.

Barbara Marx Hubbard states that "we are entering the age of 'conscious evaluation,' that is, we are affecting the future with our every act at an increasing rate of impact. We are at the threshold of a choiceful, open future or disintegration and stagnation, depending on our acts. The decade between the 80's and 90's is one of the most pivotal in the evolution of the human race." She goes on to state that "there is no time to lose."

Barbara Marx Hubbard's paper shows us how we can develop a curriculum to help students understand the process of future change.

Linda Addison continues this concern for the future by developing a curriculum that will train our gifted youth to become the leaders of tomorrow.

The other papers included in this volume were selected for their applicability to working with the gifted. To help them not only become the leaders of tomorrow, but to make a better tomorrow for all of us.

Falls Church, Virginia
March, 1981

Jeffrey H. Orloff

1

A METACURRICULUM FOR THE FUTURE

Barbara Max Hubbard
Director
International Committee
for the Future
Washington, D.C.

The crisis of education is the crisis of the world: a system under stress moving toward a new order of wholeness or disintegration.

Right actions now can have a transforming effect not only on the future of education but society itself.

A creative minority, at this time of perturbation in a dynamic system, can help the whole educational system, not reform, which is impossible, but evolve, which is inevitable!

Purpose of Education

The new purpose of education as we approach the 21st century is to enable students (which includes everyone!) to participate consciously and wisely in the creation of desirable futures commensurate with human capabilities and aspirations.

The key fact of our age is that humanity is becoming responsible for the future. We are entering the age of "conscious evolution," that is, we are affecting the future with our every act at an increasing rate of impact. We are at the threshold of a choiceful, open future or disintegration and stagnation, depending on our acts. The decade of the 80's and 90's is one of the most pivotal in the evolution of the human race.

There is no time to lose.

Metacurriculum for the Future should be a base out of which agendas for long-range personal and social development springs.

Context for a Metacurriculum for the Future

The Metacurriculum should be based on the awareness that each person is a formative part of an evolving process. The process which produced us has its roots at the origin of the universe and is continuing now. We are participants in designing our own futures--the next steps of evolution, for better or for worse. To become responsible and creative guides for change, we need to understand the processes and principles of evolutionary transformation, both on the macro-scale, and in our personal lives.

The Metacurriculum should begin the challenging task of mapping, learning and communicating the whole process of evolutionary history from the formation of matter to the present and into the foreseeable future.

Every discipline is involved, because there is a developmental aspect to everything--physical, biological, cultural and personal. Every discipline would contribute to the Metacurriculum, working toward a new discipline of disciplines, a transdiscipline which seeks to understand the unifying principles of transformation in order that we may guide change in a manner that increases our opportunities for the future.

Not Educational "Reform" but Education Innovation

Our period of history is comparable to other great ages when new educational processes were invented. For example in 5th Century Greece, the market place, or Agora, became the center of education. The socratic method was developed. At another period, the monasteries became the centers of education. Society was disintegrating. People withdrew to save the knowledge of the past. Out of these monasteries came the first universities in Bologna, in Paris and in Oxford. Our present educational system grew out of the monasteries...and shows it! We still structure knowledge in separate categories as a way of preserving it and handing it on. Vast areas of knowledge have been added, encrusting the ancient model, but it remains structurally the same... separate disciplines.

However, the emerging view of reality, as being mapped both by post-Newtonian science and deepening intuition is that reality is a wholistic participatory process in which observer and observed interact. Even more important, there are indications that the process is irreversible. As reported in the New York Times, Tuesday, May 29, 1979:

> "Scientists in different fields are beginning to see a possible loophole in a fundamental law of physics that has for a century imprinted a profound pessimism upon the attitudes of science toward everything from cancer research to the fate of the universe.
>
> The new and basically optimistic idea seems to show for the first time how life and even human civilizations can and must run uphill on their own in apparent defiance of the Second Law of Thermodynamics. It is an idea that may ultimately revolutionize science and open vast new possibilities for man in recording his society and world."

As stated by Ilya Prigogine, a Belgian chemist who won a Nobel Prize in 1977:

> "The unexpected thing is that this new sense of irreversibility is a positive thing, it is optimistic because it means evolution. It leads to fluctuations, to instabilities, and these are the driving forces in dissipative structures that produce higher orders of organization from initially simple systems."

As Marilyn Ferguson puts it in the Brain/Mind Bulletin: "Cooperation seems to be a key. The more complex a system, the greater its potential for self-transcendence. Its parts cooperate to reorganize it."

Since our system is entering a period of instability, the necessity is to understand our problems as "evolutionary drivers," to see ahead to "higher orders of organization" and to discover how to cooperate to achieve that new order.

What is needed is a pro-active educational system, which maps reality as a process and helps the student enter the process to envision and enact desirable futures.

The first "pro-active" educational group will serve a role as critical as that of the British Royal Society in 1667. It was the first society of scientific observers, gathered around Newton, who became curious about how nature actually works...how things grow, how fire burns, etc. The scientific method of investigation was born and changed the world.

The first centers dedicated to studying how humans and nature evolve in order to participate consciously in the creation of futures, will be a step of comparable importance. The methods of conscious evolution will be initiated.

Purposes of a Metacurriculum for the Future

The purposes of a Meta curriculum for the Future are to prepare students in all fields, including undergraduates, faculty, decision-makers in government, corporations, the arts, sciences and humanities:

1. To learn creative evolutionary processes linking human interests with the natural directions of evolution.

2. To understand personal evolutionary potential and to develop a daily personal health enhancement program toward learning to have a "good day"... to become a whole person to help our planetary system become more whole.

3. To identify emerging vocational and career opportunities based on the potentials of the individual and the evolving needs of society... the "evolutionary connection" between personal creativity and changing social needs.

4. To develop evolutionary management processes for social innovation to help society evolve gracefully.

The link between personal, social and planetary development is a continual interweaving strand, with balanced emphasis on inner attunement to the evolutionary process, external study of it and social action to achieve long-range goals.

How the Metacurriculum Might Function

1. Bring together a core group of faculty, students, and colleagues from research, government, corporate planning groups, etc.

2. Develop content areas of the Metacurriculum with emphasis on historical periods of quantum change.

3. Identify interested faculty in each discipline and begin their cooperative self-education and training in the meta-discipline.

4. Identify growing edge researchers to supply continuing new information.

5. Identify leaders in various fields interested in facilitating change, bringing them together for seminars and planning sessions.

6. Identify communicators in the media and arts interested in the future and bring them in contact with future-oriented thinkers and activitiest.

7. Identify systems thinkers and bring them together from time to time to help map the laws and processes of transformation.

8. Develop a "Book of Connections" - contact with people at the growing edge, the "evolutionary network," helping them to discover and interact with each other, and with students seeking participation at the forefront of their fields.

Content Areas of the Metacurriculum

CONTENT AREA I. PAST IMAGES OF REALITY: MAPS AND THE MAPPING PROCESS

The image of reality which poeple hold is the most important idea in their lives...and most people do not know they have it. It is so all pervasive as to be unnoticeable yet it profoundly affects our behavior. For, as we see reality, so we act, and as we act, so we tend to become. Our map of reality creates our futures.

The Metacurriculum is a conscious effort to map and to experience reality as an evolving process subject to human choice, guidance and enhancement.

Its first step, therefore, is to make students aware that the evolutionary map, like all other images of reality, is a construct of the human nervous system and brain. Human knowledge is based on abstractions from a non-verbal continuum of events. We become "conscious of abstracting" and learn that the map is NOT the territory.

Section I: The Mapping Process

A. An experiential introduction to the nervous system and brain, the range and limitations of our senses, to demonstrate that everything we perceive has already been mapped and screened by our nervous system and brain.

B. The history of mathematical concepts and geographical maps. The economic and cultural impact of differing views of space/time.

C. Language as a Mapping System

D. Semantics and Mental Hygiene. How language affects personal happiness and interpersonal relations.

Section II: An Overview of Maps of Images of Reality

A. Maps as seen by various cultures through their art and literature, with emphasis on how the image of reality affected the history of the culture from breakthrough to breakdown, focussing on such cultures as India, Egypt, China, Greco-Roman, Middle Ages, Renaissance, Modern Western, etc.

B. Preparing students to become aware, not only of the past, but of their own presently held image

of reality and to recognize a responsibility to develop a conceptual map on the broadest base of evolving knowledge. It helps us see ourselves as co-creators of the environment to which we adapt, rather than merely passive creatures selected by that environment. The individual sees him or herself as a responsive, creative element of evolution.

CONTENT AREA II. PRESENT IMAGES OF REALITY: THE EVOLUTIONARY MAP; AN OVERVIEW OF THE HISTORY OF EVOLUTION

The second content area is a conscious effort to construct a new map of reality as an evolutionary process moving toward optimum futures. It presents a fifteen billion year survey of how the processes appear to work.

Critical segments can be focussed on in depth according to the interest of the student, but all students will be required to understand the whole context of which their special field is a vital part.

The best way to approach such a vast process is to select key periods of "quantum transformation," when the "system" was under stress, in transition to a new equilibrium, and to new potentialities. Such periods of rapid, evolutionary change best reveal the principles of transformation which can serve as guides to our innovation and decision-making now.

Key Periods of Evolutionary History

Section I: The Evolution of the Physical Universe

A. Experiential introduction to astronomy; skywatching.

B. Brief history of astronomical instruments and observers; the use of instruments in mapping the universe from Ptolemy to Pioneer.

C. Early theories on the origin of the universe and properties of matter; Oriental, Greek, Genesis, Alchemy.

D. Modern discoveries which changed our ideas about the origin of our existence: Mass-Energy Equivalence; the process of how stars produce energy; discovery of receding galaxies.

E. Contemporary theories on cosmic, galactic, steller and planetary evolution.

Section II: The Evolution of Life

A. Early theories on the origin of life: Oriental; Greek; Genesis.

B. Modern discoveries which changed our ideas about the origin of life: Structural Analysis, Development; The Fossil Record; Geological Distribution; Chemical Analysis.

C. The chemical origins of life: The DNA structure and genetics.

D. The evolution of multicellular organisms.

E. The formation of the biosphere and our natural environment.

F. The origin of the species.

G. The evolution of the nervous system and brain.

Section III: The Evolution of Humanity and Self-Consciousness

A. The biology of humans including the origin of Homo Sapiens.

B. The emergence of myths, rituals, language: the "roots of consciousness" and culture seen from an evolutionary perspective.

C. An evolutionary analysis of technology as a continuum from nature's technology, i.e. the genetic code, photosynthesis to human technologies such as cybernetics and large space systems, with emphasis on "how mother nature does it," so we can learn to cooperate with "natural" technological/ ecological systems as we become stewards of our own planet and builders of new worlds in space.

Section IV: An Overview of Human History

A. The evolution of civilization studied as a continuum of steps to trancend limits to reach toward fulfillment of human potential.

B. A study of motivating visions of the future of other cultures, including religious eschatologies, in preparation for an analysis of new inclusive visions of the future based on deep aspirations and emerging capabilities.

CONTENT AREA III. THE PRESENT

Section I: Current Events

A. The development of models of current events seen as a whole systems shift from one period of evolution to the next, affecting all major systems, environment, government, the economy, international relations, religion, etc.

CONTENT AREA IV. FUTURES

Section I: Evolutionary Views

A. An evolutionary view of emerging capabilities as part of the process rather than as separate phenomena. Evolutionary capacities in biology, cybernetics, astronautics, brain/mind understanding, etc. examined for mutually reinforcing patterns and natural evolutionary potentials as learned from the study of fifteen billion years of transformation.

B. Envisionments of a healthy planet at the coming stage of evolution based on the spectrum of human and universal potentials.

C. Development of techniques for long-range decision making from the data base of the whole evolutionary history, rather than a few thousand years.

D. Techniques for evolutionary management at the institutional level.

E. Mapping futurists working at the growing edge. Contact, co-workership wherever possible to help students and leaders work together for positive change. Development of the "Book of Connections."

CONTENT AREA V. THE ARTS AS COMMUNICATORS AND CREATORS OF OUR FUTURES

CONTENT AREA VI. PERSONAL GROWTH AND HEALTH ENHANCEMENT

This area would run throughout the entire Metacurriculum as a continuing opportunity for students to experience themselves as responsible for their own lives, including:

1. Health Enhancement.

2. Personal Growth Processes.

3. Interpersonal Relationships.

4. Motivation, spirit consciousness explored by contact with various leaders in the fields, plus a personally developed program for inner development.

5. An evolutionary approach to career counseling and vocational search.

Conclusion

The Metacurriculum for the Future should help each student to experience him or herself as deeply attuned to the processes of creation, a vital link between the past and the future, at the source of life, rather than feeling the victim of it. The affirmation of individual and species potential which is gained from an evolutionary perspective helps dispell modern cynicism and despair...which can become a self-fulfilling prophecy. If we see the future as likely to be worse than the present, motivation is nipped in the bud, energies atrify. Indeed, hope is a biological necessity for the health of the individual and society.

The evolutionary perspective brings hope butressed by the experience of fifteen billion years of transformation, which is continuing now. From this perspective Homo Sapiens is very young, our sun has billions of years of life, we have just become conscious of our responsibility for our own futures, we have barely tapped our potentials, we have just set foot beyond our mother earth. It is as Peter Vajk puts it, "Eight o'clock in the morning, the biosphere has just awakened, the day is about to begin."

We are born at the dawn of the universal age, at a time when the possibilities for a choiceful future are literally immeasureable. We can say as Erasmus did at the Renaissance: "Immortal God, what a day I see dawning. Would that I were young again."

Reference: 1. From a paper, Evolution and Human Nature, Michael Grady, Frostburg State College.

2

BUILDING A CURRICULUM TO TRAIN LEADERSHIP ABILITIES

Linda Addison
Consultant
Alexandria, Virginia

Gifted education has been characterized by an ever-expanding quality. From Galton's conception of the heredity genius to the definition in the report of the Commissioner of Education to the U.S. Senate in 1972 delineating six areas of giftedness, attempts have been made to set out who are our gifted. The 1972 expanded definition included those students with outstanding leadership ability and the general public has decried the national shortage of leaders, yet little has been done in the way of identifying these students and providing them with an appropriate education. With impending budget crises, it will be essential that these leadership programs rest upon a sound and comprehensive foundation. This paper seeks to address issues surrounding the development of a leadership training program.

Unfortunately, it has been the typical modus operandi of gifted programs to begin with only one program component and attach any others in a less systematic fashion. A well-developed program for the gifted will follow a logical progression, as diagrammed below, with each successive step building upon the previous one, and leading into the components which follow.

Philosophy
|
Goals
|
Identification
|
Case Study
|
Curriculum
|
Individual Plan
|
Evaluation

In building a leadership program these same components can be addressed.

The philosophy of any leadership program needs to express the essential rationale for the program and the anticipated end result. Some school officials express concern that a program to train leaders sounds like a Hitler movement. Others question the elitist notion, stating that all children should receive leadership training. The philosophical statement must confront these legitimate concerns - why this program and why these students. A sample philosophical statement can be found in the Appendix.

The philosophical statement, in turn, provides a direct conduit for the program goals. Based on the stated intent of the program, what are the anticipated outcomes. One goal, for example, might be as follows:

> The students will gain an understanding of what leadership is in a variety of settings.

Other goals may be found in the Appendix. These goals should also give the reader a flavor for the kind of program which will be set up and the kinds of activities which will be included.

The identification procedures come next. While the development of our leadership program is patterned after a program for intellectually gifted students, the field of leadership lacks the instrumentation for identification which exists in the intellectual area. There is no Stanford-Binet of leadership. Less traditional, more experimental methods must be used. Possible identification procedures include: teacher nomination, adult/supervisor nomination, peer nomination, positions held (demonstrated leadership), tests, rating scales and the assessment center. The philosophy and goals, however, should dictate whether this leadership training program is only for those identified as highly gifted in leadership ability, or for those identified as intellectually gifted who are assumed to have potential for taking leadership positions, or for all students.

Once identified, a case study needs to be conducted to determine where each student stands in relation to the goals of the program. This assessment process should use a variety of methods for gathering information, including questionnaires, rating scales, interviews, observation techniques, anecdotal records, logs, simulation or situational tests and biographical information. If one of your goals dealt with identifying leadership style, you might use the T-P Leadership Questionnaire. Some questionnaires on leadership style and interpersonal relations are listed in the Appendix. It is essential that each goal area be assessed in the most appropriate and accurate manner.

The curriculum for the program is derived from all of the previous steps. It is a master plan, rather than a schedule which must be adhered to by all. It is said that bad luck, fairy tales, magic and components of gifted education come in threes. The curriculum for a leadership training program must be developed from three perspectives if it is to be comprehensive. This three-pronged approach includes knowledge, skills and attitudes. The curriculum for a leadership training program in one community could be dissimilar from that of another community because of different philosophies, goals and identification procedures, but the pattern should remain the same. One possible program might include the following:

KNOWLEDGE	SKILLS	ATTITUDES
1. Theories of leadership	1. Communication	1. Self confidence
2. Historical study of leaders	2. Decision-making	2. Sense of commitment

A more completely developed model may be found in the Appendix.

Just as the intellectual strengths and weaknesses are not reflected in an IQ score, so mere identification of a group of students gifted in leadership does not indicate a uniform group. The case study information should be combined with the curriculum master plan to develop individual plans. The notion of leadership being developed on an independent basis may sound antithetical, unless it is acknowledged that individual plans or independent work does not mean "working alone." Within one single activity many students may be working on individual objectives. The activity in the Appendix entitled "Effective Leadership" could be used to help one student develop consensus decision-making skills and another student could be working on a definition of leadership. These individual plans may be worked out through a contractual basis. If a student is gifted in leadership ability, certainly he/she should be able to play an integral role in the design of the individual program. It may be quite effective to have the student share his/her objective with one other student. This dyadic relationship creates a support/feedback mechanism that a teacher may not be able to provide, particularly in adolescence when peer relations are extremely important. The support/feedback role also is essential to developing leadership, so that two purposes are being met. The Appendix contains a bibliography of books which are helpful in developing a curriculum.

The final step listed is that of evaluation. This is not meant to convey the idea that evaluation only happens at the end. Evaluation should be viewed as a decision-making process, so that each component of the program should be evaluated periodically. Evaluation in this case pertains particularly to the success of the individual student and the program as a whole. The student, for example, could be evaluated in terms of objectives set and the starting point, using a variety of assessment techniques. The total program could be evaluated in terms of the stated goals and its success in helping individual students grow as effective leaders.

It is hoped that this more comprehensive approach to development of a program to train leadership abilities will facilitate persons embarking on this experimental venture. While business, government, and the military have been training for leadership in a more concerted manner over the past several years, this is new to the field of education. Hopefully through systematic planning, careful documentation, research and communication of results of these efforts, this can become an important and integral part of the educational process.

APPENDIX

PHILOSOPHY

As far back as Greek times, society has been concerned with fostering the leadership talent in its population. The old notion of a "born leader" has given way to a more realistic picture of a leader as a function of a situation or a group. It is possible to train potential leaders to be more effective in a greater range and number of situations.

The country is faced with seemingly insoluable problems such as pollution, energy, population, etc. Everywhere there seems to be a hue and cry for leaders to provide new directions and new strength for solving these problems. Schools serve as a logical institution for identifying potential leaders and nurturing these unique abilities. Knowledge, skills and attitudes necessary for developing effective and responsible leaders for the future should be an educational priority in preparing for the future.

GOALS

The student will:

* Gain an understanding of what leadership is in a variety of settings
* Develop an awareness of individual strengths and weaknesses as a leader
* Acquire the skills necessary for effective leadership
* Be able to identify problems and to attack them in a systematic fashion
* Utilize a creative approach to problem solving
* Develop moral and ethical values regarding leadership and its inherent responsibilities

SCALES AND INSTRUMENTS FOR LEADERSHIP PROGRAM

I. LEADERSHIP STYLES

A. Least-Preferred Co-Worker: Contains three components--Leader-Member Relations, Task Structure and Position Power, all related to the situational nature of leadership. Results given in terms of task/relations orientation. Training program developed.

Fiedler, Fred E. and Chemers, Martin M. Improving Leadership Effectiveness: The Leader Match Concept. New York: John Wiley & Sons, Inc., 1976.

B. Myers-Briggs Type Indicator: Set of 140 self-report questions that indicate preferences along four dimensions: extrovert - introvert, sensing - intuition, thinking - feeling, perception - judgment. These are interpreted in terms of leadership styles and group interaction.

Center for Applications of Psychological Type, 1441 N.W. 6th Street, Suite B 400, Gainesville, FL 32601.

C. T-P Leadership Questionnaire: Self-report questionnaire that looks at leadership in terms of concern for task and concern for people.

University Associates Publishers and Consultants, 7596 Eads Avenue, La Jolla, California 92037.

II. INTERPERSONAL SKILLS

A. Reaching Out: Interpersonal Effectiveness and Self-Actualization: This book contains a number of short skill checklists related to such things as interpersonal patterns, self-disclosure, trust, listening and responding, etc. Activities for developing these skills are also listed.

Johnson, David W. Reaching Out. Englewood Cliffs, NJ: Prentice-Hall, Inc., 1972.

B. Assertiveness/Risk Taking Scales: These scales can be found in any number of books on assertiveness training. One example -

Phelps, Stanlee and Austin, Nancy. The Assertive Woman. San Luis Obispo, CA: Impact Publishers, 1975.

C. University Associates: The seven volumes of A Handbook of Structured Experiences for Human Relations Training and the annuals from this group contain instruments of a wide variety that are very helpful in developing a leadership program. (Address in I-C)

D. FIRO-B: This questionnaire looks at interaction in terms of the dimensions of control, affection and inclusion. These, in turn, are viewed as expressed and desired, thus giving training implications.

Consulting Psychologists Press, 577 College Avenue, Palo Alto, CA 94306.

BUILDING CURRICULUM FOR LEADERSHIP TRAINING

Sample areas to be covered:

KNOWLEDGE	SKILLS	ATTITUDES
1. Qualities of leaders	1. Divergent thinking	1. Self confidence
2. Leadership styles	2. Organization	2. Sensitive to others
3. Historical study of leaders	3. Problem solving	3. Social/moral responsibility
4. Theories of leadership	4. Shared leadership	4. Enthusiasm
	5. Communication	5. Sense of commitment
	6. Futuristic thinking	
	7. Flexibility	
	8. Decision-making	

EFFECTIVE LEADERSHIP

Directions: Rank the following characteristics in order of priority with regard to leadership effectiveness.

_____ Futuristic
_____ Intelligent
_____ Flexible
_____ Sense of commitment
_____ Problem solver
_____ Divergent and abstract thinker
_____ Self confident
_____ Organizer
_____ Sensitive to others
_____ Enthusiastic
_____ Socially and morally responsible
_____ Shares leadership

****

***This activity can be used following discussions on the characteristics of leaders or following a historical approach to the study of leaders. It could be an individual activity for further discussion, or it may be used to develop decision-making abilities by having groups of students come to a consensus in ranking.

ANSWER: According to a study by the Ford Foundation, the correct order would be: intelligent, divergent and abstract thinker, futuristic, organizer, self-confident, flexible, sense of commitment, enthusiastic, socially and morally responsible, problem solver and shares leadership.

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3

GIFTED BOYS, GIFTED GIRLS— WHAT'S THE DIFFERENCE

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Girls and boys are different from each other, an old thought surely. The more usual statement "girls are different from boys" (or vice versa) implies that the attributes of one sex are somehow the standard against which the other is judged. The difference between the opening statement and its more common version is not merely semantic but rather has implications for educators who are serious in their desire to help all gifted children develop their full potential.

It is hard to discuss evidence of differences between the sexes in a dispassionate way. For centuries both science and religion regarded males as the norm in human beings and females a deviation from that norm. Medieval churchmen debated whether or not women had souls, and doctors regarded women as "defective" males. The common root of the words hysteria, a frequent diagnosis by 19th century physicians for a variety of gynecological problems, and hysterectomy is no linguistic coincidence! Women were thought to have "finer natures" than men, an idea used in pro and con arguments during the struggle for women's suffrage. Both proponents and opponents of votes for women felt that the women's vote would likely support pacificist candidates, either a desirable or undesirable prediction depending upon ones views on war and peace. Even today, attitudes defined as good mental health for men are often regarded as maladjustment and dysfunction when evidenced by women.[1]

Professor Henry Higgins in My Fair Lady summed up the situation in the song: "Why Can't A Woman Be More Like A Man?" Whatever ones opinion about the relationship between men and women, the subject of differences between the sexes is either exaggerated or ignored to make a point for ones own side of the argument.

In education, the models for dealing with differences involve groupings -- e.g. the handicapped and non-handicapped, or students who are not proficient in standard English and those who are -- which clearly imply a goal that one party in the grouping come up to the norm established by the other party. While our heightened social conscienciousness about handicaps and deficiencies in English make us uncomfortable with the words "inferior" and "superior" when describing these groups, performance differences between the sexes are still frequently associated with such terms.

Even more devastating from an educational standpoint is the acceptance of sex differences in performance or ability

as natural and therefore unconsequential. Such an attitude discourages efforts to determine underlying causes of the differences or to reduce their effects. Thus, the sex presumed to be superior in a certain field gets much opportunity for improvement, while the other falls farther behind in a classic, self-fulfilling prophecy.

Early efforts to eliminate sex discrimination and stereotyping from public education attributed all performance differences between the sexes to unequal treatment and opportunities. Thoughtful proponents did recognize that this sort of fanatical interpretation of equality put them sometimes at odds with common sense, but the strategy was seen as an effective way of making a very complex issue simple to understand. In the past, all aspects of difference between the sexes had been used to justify exclusion, usually of females, from educational opportunities offered to the other sex. Considering centuries of sex discrimination, acceptance of the philosophy "Boys, girls, -- sure we treat them all the same!" represented real progress.

However, recent research into human biology and behavior is beginning to show that there are some real differences between the sexes which, if edcuation ignores, will perpetuate inequalities. Some of the differences actually have a basis in biology; others are more the product of culture. While most of the studies of sex differences have not focused exclusively on gifted children, high-ability males and females were included in many of the studies and the findings are not irrelevant to this special population. Some studies have shown specifically that many gifted girls and gifted boys show behavior patterns which are contrary to the usual stereotypes associated with each sex. Following are some of the differences in abilities, performance and attitudes which appear repeatedly in the research and should be considered in designing programs for the education of gifted children:

- Males have superior visual-spatial abilities.[2]
- Males are more aggressive.[3]
- Males and females are about equal in computation and other mathematical skills as young children, but from adolescence on, males perform better.[4]
- Females have greater verbal abilities, which develop earlier and become superior in adolescence.[5]
- Females develop small muscle coordination earlier although males do catch up.[6]
- Females are better able to discriminate among sounds in infancy and their hearing acuity remains sharper in old age.[7]

- Girls tend to underestimate their own abilities, while boys are more likely to overestimate theirs.[8]
- Boys are frequently stimulated by competition in which they can dominate others, but girls may be motivated better by other forms of competition.[9]
- Girls of high intellectual achievement of evidence characteristics such as independence and competitiveness, which are commonly labelled as masculine traits, while intellectually outstanding boys frequently show the anxiety and passive behavior stereotypically associated with feminity.[10]
- Boys expect that they will work but seem oblivious to their future roles of husband and father, while girls, even those who say they want to work often see the responsibilities of being a wife and mother forcing them to make an either-or choice between working and having a family.[11]
- Both boys and girls want to be successful but what is socially rewarded as success may be considerably different for boys than for girls.[12]

Such a listing of sex differences produces an almost instinctive desire to tally up the "betters" and "superiors" and then announce triumphantly that one sex or the other is clearly on top. Educators, particularly, must refrain from making such comparisons and judgements. Sex differences must be recognized, yes, but the consequence must not be to set the behavior or abilities of one sex as the standard which the other must meet. Rather, the educational process must provide accommodations for the fact that males and females may call on different abilities and perspectives when solving problems and living life.

Research into functioning of the brain and also sports medicine has begun to show a wide variety of significant differences between males and females. The results also provide good examples of why absolute judgements of "superior" and "inferior" should not be made about such differences. The fact that the visual-spatial ability in males is concentrated in one hemisphere of the brain gives them a decided edge in tasks commonly incorporated into math aptitude and intelligence tests. But the difusion of that ability between both hemispheres of the brain in females allows stroke victims who are women to recover more quickly and completely.[13] In sports, women were formerly excluded from vigorous athletic activity because of the fear that the feminine body was too fragile or that masculine muscles would develop from too much exercise. Research now shows that the amount of male hormone testosterone and the number of muscle fibers determine the bulginess of muscles. Women, having less of each, will not develop masculine musclature from exercise, even "pumping iron!" Furthermore,

because of their ratio of fat to muscle, women are particularly well suited to some very strenuous activities such as long distance swimming and running.[14]

For educators, whether differences between males and females are caused by nature or nurture is basically immaterial. The real issue is: How are we going to respond to the differences whatever their cause. In contrast to the now abolished "boys only" and "girls only" courses and activities which formerly excluded all members of the sex presumed not sufficiently interested or able, the purpose behind the suggestions below is to accommodate sex differences or eliminate deficiencies, not to perpetuate them.

Schooling and Chronological Age

Academic and behavior problems could be reduced for some children if real readiness for classroom demands was the factor determining when a child entered school. Present rigid age requirements put many boys in school before they are ready while making some girls waste time waiting. Because of their earlier maturity, girls usually spend part of their high school years with boys who are physically and psychologically many months behind them. A major accommodation for the developmental differences between males and females would be establishment of at least a two year span during which a child could enter school based solely upon his or her own readiness.

Acceleration

"Grade skipping" and advanced placement are sometimes used to meet the needs of bright students. However, boys and girls are likely to react differently to such strategies, particularly at various ages. While the earlier maturity of girls makes them good candidates for such acceleration, the move should be made early, before they become heavily involved with the tight social groups which take on increasing importance to them. Homogeneous grouping also benefits bright girls by providing them with a social group which accepts high intellectual achievement for females as the group norm, an uncommon situation in society in general. Boys, on the other hand, seem better able to weigh short and long range benefits of moving ahead and seem not so tightly tied to their social group when selecting educational opportunities.

Testing

Since identification of gifted children and measurement of their progress are very dependent upon tests of all kinds, serious efforts must be made to ensure that the instruments

give a fair evaluation of both boys and girls. Very few tests, either teacher-made or standardized, allow much variety in what is expected as the right answer or the right way of arriving at that answer. Furthermore, important tests such as the National Merit Scholarship Examination contain a preponderance of items which almost guarantee superior male performance.[15] Because on the most widely used test of general intelligence only two of the eleven sub tests produce similar mean scores by males and females, a "masculinity/feminity index" is used to interpret the scores. While such an index is a step in factoring out sex bias inherent in the test structure, real equality calls for testing procedures which would measure the effectiveness of different perspectives or modes of thinking.

Competition

Teachers and parents try to channel the aggressive behavior of boys into athletic or academic competition in order to motivate them to strive for high performance. Competition in which the winner assumes a dominance over all other participants does not necessarily motivate girls as it does boys. In fact, sometimes girls with strong social sensitivities will hold back in highly competitive situations if winning would strain social relationships. When opportunities are provided for all students to work to a standard, no participant is knocked out of place by the successes of others, a condition conducive to high performance by girls without fear of social repercussions.

Counseling

Because of their talents and abilities, gifted students are looked to for the special contributions they may make to the improved welfare of society as a whole. Thus, academic and career counseling for gifted students has importance for the nation as well as for individuals. While both boys and girls benefit from counseling, the approach with girls should include recognition that they are likely to be very apprehensive about going into previously male fields because there are so few female role models for them. Girls need to be alerted to what may happen if a female Phi Beta Kappa includes on her application for a management trainee position that she is a skilled typist. Furthermore, some girls have the idea that they must make a choice between family or career. If a girl chooses the former, society loses her talents, and if the latter, her potential genetic contribution. Gifted girls also need help in making life plans which incorporate realistic family and career goals.

Mathematics

Many schools have special teachers and classes for students who need to improve reading and other verbal skills. While these are not reserved for boys only, they do fulfill needs many boys have in these areas. Few schools, however, have programs on a similar scale for students with difficulties in math. Because of increased requirements in a wide variety of college majors for advanced mathematics and computer literacy, gifted girls may be severly disadvantaged if special efforts are not made to provide them math education which takes into account differences in the way they process mathematical concepts.

Research

Too little research has been done on the physical and psychological differences between males and females. Too little research on other topics has failed to recognize the effects of male and female differences on the general results. Even worse, too often, when female behavior is widely at odds with male behavior in a given study, the data on females is just discarded (e.g. the exclusion of women from the follow-up studies of Terman on gifted children). All educational research should include in the design ways to determine whether differences between the sexes is significant and if so, what special approaches must be taken so that the resulting data give a clear picture of the behavior of both sexes separately as well as for the group as a whole.

Differences which affect the educational process do exist between males and females. As educators, we must resist the temptation to judge evidence of such differences with labels such as "superior" and "inferior." Instead, we must move beyond our current concern for merely providing both boys and girls the right to be considered for, participate in, or receive the benefits of programs for the gifted. The next step in equal opportunity is to ensure that sex differences are not ignored, as if they did not exist, but rather dealt with so that inequalities caused by them do not exist.

FOOTNOTES

1. Broverman, Inge and Donald, and Clarkson, Frank. "Sex Role Stereotyping and Clinical Judgements of Mental Health."

2. Maccoby, Elanor, and Jacklin, Carol. The Psychology of Sex Differences p. 351.

3. Ibid. p. 352

4. Ibid. p. 352

5. Ibid. p. 351

6. Kaplan, Janice. Women and Sports. p. 44

7. Restak, Richard. "The Other Difference Between Boys and Girls" from Educational Leadership p. 233.

8. Guttentag, Marcia, and Bray, Helen. Undoing Sex Stereotypes: Research and Resources for Educators. p. 13

9. Maccoby, Eleanor, and Jacklin, Carol. op cit. p. 247.

10. Resat, Richard. op cit. p. 234

11. Grams, Jean, and Waetjen, Walter. Sex: Does It Make a Difference? p. 215

12. Horner, Matina "Double Bind for Bright Women" p. 79

13. Goleman, Daniel. "Special Abilities of the Sexes: Do They Begin in the Brain?" from Psychology Today. p. 51

14. Kaplan, Janice. op cit. p. 37

15. Restak, Richard. op cit. p. 235

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4

WHY DON'T WE PRACTICE WHAT WE TEACH?

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Does teacher behavior experienced as students determine future teacher behavior? Or, what if teachers of gifted and talented students could experience instruction for teacher trainers who operate in terms of the models taught or who "model the model?"

So often I have heard leaders in gifted education criticize the "fun and games" approach that they say permeate too many of our gifted and talented programs. Yet, as I examine the materials that are available for purchase, this type seems to be the most prominent. I dare say, that if many of our college classrooms were visited, one would discover either that a "fun and games" emphasis is being encouraged there, too; or that a "you do what I say, not what you see me doing" approach is being practiced. I am a teacher educator; and I believe that teacher educators must change their behavior if a real change is to be experienced in gifted education and if we are going to develop truly defensible programs for gifted and talented students.

So, why don't we practice what we teach?

The old adage
  is as true today
As when it was
  first begun.
It's much, much easier
  said than done!

Guilford maintained in his book, Intelligence, Creativity and Their Educational Implications, that if the development of creativity on the part of students is to be an educational goal, then such development will depend upon changed attitudes of both teacher and student. A flexibility in teaching and learning is needed so that students can learn how to learn rather than what to learn. Students must be so educated that they can use information that is learned in one context, in various contexts of which they do not yet know. Teachers cannot very well be instrumental in equipping the students of today with skills for the future by continuing traditional practices which utilize a minimum of intellectual abilities when, according to Guilford, these students are needing "functional, transferable information."

This changed attitude on the part of both teacher and student is as much, if not more, necessary for the college teacher and student as it is for the elementary or secondary teacher and student. For this reason, in this presentation, I am using Guilford's Structure of Intellect to illustrate my contention that teacher trainers need to practice the theories taught.

To center our attention on the Structure of Intellect model, may I direct your attention to the model before you, consisting of foam rubber blocks, which was designed to serve as a visual stimulus of his three dimensional cube, originally theorized as consisting of 120 components, cells or trigrams, but later extended to include 150 cells, components or trigrams. Dr. Guilford in his 1977 publication, Way Beyond the IQ, modified and extended the figural content area by recognizing both the visual and auditory components as separate contents. Thus, the operations include: cognition, memory, divergent production, convergent production, and evaluation; the contents include: visual, auditory, symbolic, semantic, and behavioral; and the products include: units, classes, relations, systems, transformations, and implications.

The activity sheets that have been given to you to complete at designated times during this presentation were developed, based on Guilford's work, as illustrations to show how the model could be used to teach the model. If students as future teachers are to be expected to perform in relation to that which is taught in their preparation programs, they must experience the practice of theory in these preparation programs. For example, as they study about the Structure of Intellect, they need the privilege of exercising various intellectual abilities as they are learning about these intellectual abilities. And they need to know which intellectual abilities are being addressed in the various classroom activities.

As you examine the first exercise sheet, you will note that in producing the Structure of Intellect terms in the Hidden Words exercise, the student would be using his or her ability in the convergent production of symbolic transformations (NST). Having the students develop their own Hidden Words would exercise the divergent ability for symbolic transformations (DST). The next two exercise sheets exemplify using the ability to cognize symbolic units, to cognize semantic units, and the ability to convergently produce symbolic transformations (using another type of exercise from that of the Hidden Words). All three of these utilize Structure of Intellect terms. The story, A Pig's Tale, and its accompanying work sheet can be used effectively as a group exercise as well as an individual exercise for affording students more practice of Guilford's theory. The abilities being exercised in these activities include: evaluation of semantic systems (actually the behavioral component, too), divergent production of semantic transformations, and the divergent production of semantic implications. The act of reading the story would be exercising the student's ability to cognize semantic units and systems.

The Tic Tac Toe sheet has been included in the presentation to serve as a check point to see how well you are comprehending that to which you are being exposed. To make the appropriate decisions so as to arrive at the solution, one would need to exercise

the ability to evaluate semantic classes (EMC). The answers to these various activities will be given at the end of this session.

In using these various activities and others like them, the educational goal of the teacher trainer for the student would be first, to exercise the ability to cognize the different dimensions of Guilford's theory; then, to exercise the abilities to divergently and convergently produce symbolic, semantic and behavioral transformations so that they could program for their students; and also, to exercise their evaluative abilities so that they could examine the curricular materials that are used or that are available for use and make judgments concerning the abilities that would be exercised by the students in the use of the materials.

Perhaps enough has been shown to illustrate one way teacher educators can be practicing the theories taught. I am of the opinion that the reason for the large gap between teacher preparation programs and the practicing teacher in the schools is that we talk one way and behave another and that we are modeled in terms of that which we do rather than by that which we say. Likewise, former teachers of whatever type are probably modeled in the same manner. Conceivably, by practicing what we teach, the talking and acting would become more congruent and one would see a lessening of the gap between teacher preparation programs and the actual practice of teaching. With this in mind, this interpretation of Guilford has been offered.

Two questions remain: How long can traditional educational practices survive in a future shock society without drastic changes? Why don't we practice what we teach?

Structure of Intellect

Hidden Words

Find and circle the words as per the example.

S P R O D U C T Y T N E M P Z E P U N I T S E M C

Y H E I T S R U L R T N A T N O D I B H N S U T Y

C G N V I I R V I N C M A T U T O H R O I E A G N

M G L E A K M S K N C E A K W D F L M N P O V U G

N C E R N E E A A E N M P G P I H C I H N F E A N

W D C N O I T A R E P O V N G V F I G U R A L S N

C E A O F R T D H L A R N M O E P H S I T V W N T

L K E R N O B I A Y V Y N C Y R C I T N A M E S F

A C H A A N O I T A U L A V E G S Y S T E M S L A

S F O N C T F R U V C S S M T E I Y H H K R T U T

S C H A T A L R E S I P M U A N K L M R Z X M K N

E H E A S E S F T R E T U L I T C M E B R I Q U E

S B E H A V I O R A L Q M I H K P T N M O C L I G

D S I O S Y T R E K E E M S K N U B R D Y L M N R

R T M L E R C I L S E S N O I T A C I L P M I T E

O C N U L F A T A N M C O G N I T I O N Q E M C V

F A C E H E T I T Q I O K H A I D I L K M N T Y N

L E T E T M E N I H H S M B R P H N R P M E T A O

I E D F J N T L O Q A A T Y I C S R W S A S K U C

U A C H E A O O N J O I T N L M T I Y P A S E A T

G N H J S T U C S B T R A N S F O R M A T I O N S

EXERCISE: Cognition of Symbolic Units (CSU)

Place vowels in the blanks for each item to make words using Structure of Intellect terminology.

1. __n__ts
2. c__nt__nts
3. cl__ss__s
4. pr__d__ct
5. __p__r__t__n
6. symb__l__c
7. m__m__ry
8. r__l__t__ns
9. c__gn__t__n
10. b__h__v__r__l
11. s__m__nt__c
12. syst__ms
13. tr__nsf__rm__t__ns
14. __d__t__ry
15. __mpl__c__tNNns
16. d__v__rg__nt
17. __v__l__t__n
18. c__nv__rg__nt
19. v__s__l

EXERCISE: Cognition of Semantic Units (CMU)

Complete the following definitions in terms of the SI Model.

1. Cognition means _____
2. Memory means _____
3. Divergent production means _____
4. Convergent production means _____
5. Evaluation means _____
6. Behavioral content means _____
7. Symbolic content means _____
8. Semantic content means _____
9. Transformations mean _____
10. Systems mean _____
11. Units mean _____
12. Implications mean _____

EXERCISE: Convergent Pruduction of Symbolic Transformations (NST)

A Structure of Intellect term is contained in each of the following sentences. Write the term.

1. This particular class established its own rules. _____
2. Timothy's behavior always seems repugnant. _____
3. The day of the extreme liberal seems to have run its course. _____
4. The symbol, I, can be used in many ways. _____
5. The name, Mory (strange as it may seem), is not popular. _____
6. The man felt he was not given the recognition he deserved. _____
7. The lady was surprised that the diver, Gentleman Jim, was a former teacher. _____
8. The river, Conver, gently splashed against its bank. _____
9. The valuation of the property was judged to be $200,000. _____
10. "Either the report of your audit or your resignation should be on my desk this afternoon." _____
11. Visualization skills are lacking in many school children. _____
12. His poker system stopped even the worthiest of opponents. _____
13. The good relation soon ended after after Mrs. Warner discovered his real intentions. _____
14. The first court case, Man ticked off at wife's sleeping habits, lasted two weeks. _____

A PIG'S TALE

Once upon a time there were two pigs who went to animal school. They liked each other and wanted to have a family. But, they didn't know what to do; so they went to the goat who was the head of the animal school since he was the oldest goat in the school. When he heard their plans, he promptly dismissed them from school.

The two pigs managed to make a home and soon had their family increased by three little ones. After a time, Father Pig begame frustrated and weary from the never ending work and did not know how to continue caring for his family. He soon left home, telling them they would be better off without him.

Mother pig felt the strain of daily watching over the three little ones; and when the food was all gone, she decided it would be better to send the three pigs out into the world, telling them they needed to learn some survival skills. She told them to build their own home and then cautioned them to beware of the wolf who patrolled the forest in search of stray animals. After this, she went in search of another mate.

The first little pig, who was a wee bit older than the other two, spied a man whose truck had so much straw on it that some of it was falling off. He quietly and without a word sneaked off and started gathering the straw to build himself a house alone so as to be protected from the wolf.

The other two little pigs continued on their way wondering what had happened to their brother; and fearing the worst, they hurried on to build a house. Soon they came to a large pile of sticks. In front of the sticks was a sign saying, "Keep Out." They saw no one around and decided to use the sticks for their house. They both worked very hard and soon there was a house built from the sticks.

But, one day the second little pig, who was older than the third little pig, found a large supply of food and he, being a bit lazy, kept this a secret. He decided to tell his brother than the house was not big enough for both of them and that the third pig must build his own house. He also told him that the stick house was really not safe and that he should build himself a better house for protection from the wolf.

So the third little pig very sadly and very, very angrily walked away. He remembered his mother's warning about the wolf, so he began to run. Soon he chanced upon the remains of a deserted old brick house. He mused to himself that he would build his house from these bricks and it would be a better house; but he would not let his borthers in even if they wanted to visit.

It wasn't long before his two brothers were screaming at his door. They said that the wolf had destroyed both of their houses and was in hot pursuit of both of them. The wolf had easily pulled apart the house of straw as the first little pig ran out the back door of his house. As he was running he had noticed the second little pig's house of sticks and his brother had taken him in. However, the wolf had knocked down the house of sticks as the two pigs escaped.

The third little pig refused to let them in, saying he did not believe them. Soon the wolf came and caught the two little pigs and beat them up and locked them in his cave.

A PIG'S TALE

Exercise One: Evaluation of Semantic Systems (EMS)

After reading the story, you are to rank order the seven characters in the story in terms of the most objectionable, the second most objectionable, etc. through the seventh which will be the least objectionable to you.

Exercise Two: Divergent Production of Semantic Transformations (DMT)

After reading the story, you are to list as many clever titles as you can for the story.

Exercise Three: Divergent Production of Semantic Implications (DMI)

After reading the story, you are to devise an ending for the story.

TIC TAC TOE

Designate the three activities which would be coded with the same trigram, following tic, tac, toe rules.

Adding a final verse to a poem	Finding Structure of Intellect terms embedded in sentences	Devising clever titles for a given story
Placing vowels in blanks to complete words from SI terms	Suggesting an ending for a story that reverses the expected	Completing a given story by suggesting an ending
Rewriting a familiar story such as Cinderella with the sisters, heroines	Defining Structure of Intellect terms	Deciding on the order for a series of events

ANSWER SHEET

Exercise: Hidden Words

1. Product
2. Units
3. Classes
4. Content
5. Behavioral
6. Semantic
7. Symbolic
8. Convergent Production
9. Divergent Production
10. Figural
11. Relations
12. Implications
13. Memory
14. Evaluation
15. Cognition
16.. Transformations
17. Operations
18. Systems
19. Meeker
20. Guilford

Exercise: CSU

1. Units
2. Contents
3. Classes
4. Product
5. Operation
6. Symbolic
7. Memory
8. Relations
9. Cognition
10. Behavioral
11. Semantic
12. Systems
13. Transformations
14. Auditory
15. Implications
16. Divergent
17. Evaluation
18. Convergent
19. Visual

Exercise: NST (Embedded Words)

1. Classes
2. Behavioral
3. Units
4. Symbolic
5. Memory
6. Cognition
7. Divergent
8. Convergent
9. Evaluation
10. Auditory
11. Visual
12. Systems
13. Relations
14. Semantic

Exercise: Tic, Tac, Toe

The three that would be labeled with the same trigram and that meet Tic, Tac, Toe rules are the DMT ones. Looking diagonally from the upper right hand corner to the lower left hand corner. The answers to the upper trigrams from left to right: DMI; NST; DMT. The answers to the middle trigrams, from left to right: CSU; DMT; DMI. The answers to the lower trigrams, from lfet to right: DMT; CMU; EMS.

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5

"FUTURISM"— A PREDICTION FOR THE GIFTED PERSON

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This report addresses the future of the gifted child. First a portrait of what the future will be for the next 10 to 20 years is sketched. Some methods of futures research and sources of futures information are then presented. Ways by which creative people can be influenced are explored, and the future of the gifted child is then discussed.

Everyone is handicapped in one way or another. This may be physically, in communications skills, academically or emotionally. Today's emphasis, however, is on the flip side of that coin - the gifted. Almost everyone is also gifted. Taylor's Talent Totem Pole by Calvin W. Taylor, Professor of Psychology, University of Utah, illustrates a multifaceted approach to creativity. Figure 1 contains the Totem Pole and a table which illustrates what happens when more than one unrelated talent is considered. When one talent is considered, half of the individuals will be above average. When three unrelated talents are considered, at least 87.5% of the individuals will be above average in at least one of the talent areas. Currently there is little or no correlation between grades in school and adult career success. This could be largely a reflection of the traditional single faceted approach (academic) measured by a large portion of today's schools. We must focus our concerns upon more facets of the students' talents if the budding creativity is to bloom forth as a brighter future.

THE FUTURE IS A PLACE WE ARE CREATING - NOT SIMPLY A PLACE WE ARE GOING TO!

Unknown Author

WHAT WILL THE FUTURE BRING IN THE NEXT 10 - 20 YEARS? Most of the seeds for the changes have already germinated.

The world will be viewed increasingly as a community. One reflection of this trend is the conference scheduled for June 1980 is Toronto, Canada by the World Future Society. The theme is "Thinking Globally, Acting Locally." Appropriate technology will be of increased concern. We are leaving the bigger-is-better approach in favor of small-is-beautiful. Instantaneous communication systems have made our world much smaller.

FIGURE 1

TAYLOR'S TALENT TOTEM POLE*

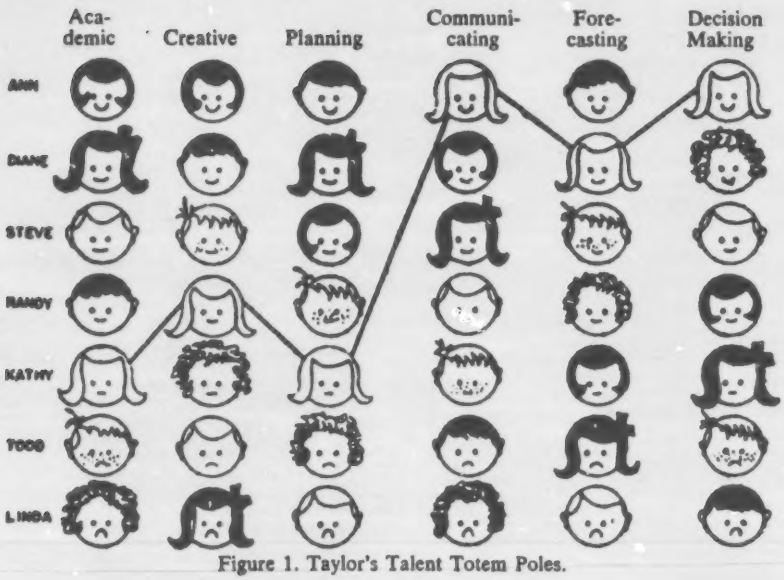

Figure 1. Taylor's Talent Totem Poles.

Multiple Talent Approach

Number of Unrelated Talents	% Above Average in at Least One Talent
1	50.0
2	75.0
3	87.5
4	93.8
5	96.9
6	98.4
7	99.2
8	99.6

*Calvin W. Taylor, Professor of Psychology, University of Utah.

A close look at America will show that we do not have a generic American public - we have American publics. We have become a country of divergent special interest groups. This will be in the years to come one of the most difficult problems in the public sector. Who really is the constituency that must be served?

Energy shortages will continue to impact on every sector of our lives. The impact on transportation is obvious to all. The rising cost of oil will be reflected in the cost of all of our goods and services. Many will cling even more fervently to their religions since a religious surge often accompanies a changing and troubled world. There are said to be no athiests in fox holes.

Recreational patterns will change. There will be shorter work weeks, thus giving more leisure time. Physical fitness will have even more importance, since more and more people will have sedentary jobs. People will demand more recreational facilities where they live because of transportation costs.

We are on the forefront of major social and ethical changes due to genetic engineering. The ultimate use of this new technology will be largely a function of our values and goals.

Nuclear war and nuclear terrorism will continue to be a real threat. This is the first time in history when literally almost any one of us has the power to destroy almost all of us.

The quality, quantity and distribution of water will take on increasing significance. This will not only be a problem in our Southwest, but it is projected that at least one Middle Eastern country will run out of water by the year 2000 even if such methods as cloud seeding are used.

Starvation will continue in a world with abundant food. This is largely because of logistics and greed. The real impact of the tragedy is only beginning to be realized: the effects of starvation are not reversible within a single generation. Physical and mental handicaps will be passed down to at least one additional generation!

The quality of the American diet will come under increasing attack. The fats, salts and chemical additives will be given further scrutiny. Technological developments such as using the output from garbage disposals as fertilizer will receive further exploration. Hydrophonics, the method of growing food without soil, will become more cost-effective.

In the field of education, the overall quantity of students in the United States will be stable. For individual school

districts, however, there will be dramatic changes. The trend of families moving to the South and Western United States will continue. There is a good chance, however, that the trend will be accelerated due to high home heating costs. Increased emphasis will be placed on the teaching of concepts and methods with less emphasis on the teaching of facts. Students will receive a dramatic increase in the amounts of information available to them. Home computers will be as common as TV sets. With technological increases in computer science, it is quite feasible that the entire contents of the Library of Congress can be stored on a 4 inch square of computer memory. The student who has access to that quantity of information will present new challenges to the educator of tomorrow. More mathematics will be taught, and life-time learning will be prevalent. We will become increasingly more valuable to the world community as disseminators of ideas than as producers of goods.

The results of a survey done in Utah are shown in Figure 2. The people in Utah were given some predictions about the future of education in the state. They were asked to judge the likeliness of the event and its desirability. Among the items ranked both highly likely and very desirable were multi-use of schools, staggered summer vacations and an influx of senior learners. It is interesting to note that the concept of 3-month summer vacation is a hold-over from when the United States had a predominently farm economy and the students were needed to help out on the farm during the growing season. With less than 4% of our population currently engaged in farming today, this is a change whose time has come. With technology growing at a pace that makes much of a college education obsolete in 3 to 4 years, it is quite logical that adults will increasingly find the need to update their educations.

Among the undesirable, but likely events was increased school violence. This is seen by the people in Utah somewhat as a result of new people moving to the West. The decline in support for education as it is today was judged to be both highly likely and desirable. The likeliness is a function of cost and teachers unions. The desirability is a function of the fact that some students are still being graduated from high school without functional reading and writing skills.

OUR AGE IS CHARACTERIZED BY A PERFECTION OF MEANS AND A CONFUSION OF GOALS - A. EINSTEIN

During his later years, Albert Einstein spent a good deal of his time as a philosopher. The above quotation highlights what he sees as one of the main problems of our age.

FIGURE 2

UTAH'S PUBLIC EDUCATION IN THE 1980s
ROUND 1 OF DELPHI TECHNIQUE

	Event	Likeliness By 1990	Degree of Desirability
1.	Multiuse of schools	High	Very Desirable
2.	Staggered summer vacations In-home TV education	High	Very Desirable
3.	Influx of senior learners	High	Very Desirable
4.	Holographic projector for in-home use	Moderate	Desirable
5.	Underground schools	Moderate	Desirable
6.	Decline in support for education - Cost, unions, student competency	High	Desirable
7.	School Violence Increase	High	Undesirable
8.	School Managers Use Computers for Efficiency	High	Desorab;e

HOW DO WE STUDY THE FUTURE? Futures, futuristics and futureology are all terms used to refer to the study of the future. The study of the future is not technically a science since a science is the study of what is. The future is what will be.

One method of looking at the future is called the problematique. This approach sees a single problem as part of a system of problems. Related problems are listed, and cause and effect relationships are analyzed. The goal is to find the real root of the problem so that a positive change can be made for the entire system. The ecosphere, the ecology of our world, is often one of the considerations in a problematique.

The Delphi technique involves several people who put forth ideas anonymously. Participants are encouraged to build upon one-another's ideas. Through iterative feedback, a concensus of action to be taken can often be reached.

Game playing is also a technique. Participants act out roles that they normally do not live. An example might be the president of a school board, a teacher, a student, or a parent. The intent is to give additional insights into how people think, feel and react in given situations.

The scenario approach allows us to look at alternative futures through a hypothetical situation description. The statements often begin with "what if --." This is an adult version of the "let's pretend --" that children often use. Scenarios allow us to explore possible future events before they happen.

Two basic approaches to studying the future are the extrapolative and the normative. For an extrapolation, the question is "Where are we headed if nothing changes?" For the normative approach the first question is "Where do we want to go?" and the second is "How do we get there?"

Futures research can have many positive benefits. All decision making involves some forecasting. Forecasting is a very normal part of our everyday activities. When you flip on a light switch, you usually will have forecasted that the light will come on. When you turn a water faucet on, you usually will have forecasted that water will flow. The use of futures research allows us to identify challenges, dangers, and opportunities that might not otherwise be there. It gives us new approaches for problem solving. We can assess alternatives that might otherwise have been overlooked. It allows us to be proactive rather than reactive. It also gives us more motivation to learn, since we obviously have the most influence over the things that have not yet happened. It is enjoyable. It's like building castles in the sand when thinking about architecture. Additionally, it offers a brief freedom from today's immediate crisis.

Today many organizations are attempting to study the future. A few of these are listed in Figure 3.

Some type of futures research is done by many government agencies. The U.S. Army Corps of Engineers and the U.S. Coast Guard use it as a tool to look at long range mission and functions. The Department of Agriculture has a similar purpose, and in addition, they offer courses which teach methodologies which can be used to study the future.

HOW WILL CREATIVE PEOPLE USE THE GIFT? An analogy of a hammer is appropriate. If you give a person a hammer, (s)he has a number of choices. Among these are construction, destruction, or simply ignoring it. What creative people do with their gift will continue to be largely a function of their internal values and goals, input from educators in both the homes and schools, and peer influence.

There are also many messages that we can send that will encourage people to put down the hammer of creativity. Some of the messages you may recognize - Don't read that trash (comic books and science fiction.) - That's fine but: You can't make a living doing that! What good will it do you as a wife and mother - For thoughts to be worthwhile, they must have tangible results - Be realistic - Arts and crafts are the best places for creativity! When we find ourselves sending these messages, there is one thought we might consider:

DON'T BE YOURSELF, BE THE PERSON YOU WANT TO BE.

Unknown Author

Another appropriate analogy might be the bow and arrow, where the bow is the social system acting upon the child, and the arrow is the child. The quality of both the bow and arrow play an important role. Too much pull on the string and the string breaks. Too little and the arrow drops to the ground. Successful launching is a function of aiming and timing. Among the skills and methodologies that are being developed and used are parent effectiveness training and self awareness. Historically, the social trends of the United States lag about 5-10 years behind Sweden. What we are now seeing in Sweden is an increased awareness of children's rights. This includes a concept that is similar to allowing a child to divorce himself (herself) from his (her) parents.

With the ever increasing tide of information available to everyone, emphasis must be placed at a far earlier age on such skills as speed reading, memory development, decision making methodologies and communications skills such as confrontation

FIGURE 3

WHO IS STUDYING THE FUTURE?

Organization	Address	Purpose	Publication
World Future Society	4916 St. Elmo Ave (Bethesda) Wash., D.C. 20014	Share information among individuals interested in studying the future	World Futures Society Catalog
Congressional Clearing House on the Future	3564 House Annex #2 Wash., D.C. 20515	Provide futures information to Congress	What's Next?
University of Houston	University of Houston Clear Lake City, TX	Master of Science in Studies of the Future	General Information
US Department of Agriculture Graduate School	Independence Ave. between 12th & 14th Streets, S.W.) Wash., D.C. 20250 202-474-4419	Offers Courses: "Anticipating the Future" "Technology Forecasting and Assessment"	Course Catalog
American Council of Life Insurance	1850 K St., N.W. Wash., D.C. 20006	Serves the insurance industry	Trend Analysis Program Reports
The Futures Group	1529 18th St., N.W. Wash., D.C. 20036	National and International futures	As requested
Midwest Research, Inc.	425 Volker Blvd. Kansas City, MO 64110	General Futures	As requested
J.F. Coates, Inc.	3738 Kanawha St., N.W. Wash., D.C. 20015	Educational Futures	General Information

and listening. These will be some of the most critical skills for successful adaptation and survival during the next decades.

WHAT DOES THE FUTURE HOLD FOR THE GIFTED? The challenges are abundant. The methods and technologies are largely already existing. Careers of the future will be those that seek to resolve the problems and which are consistent with the trends presented in the section on the portrait of the future. Gifted people can address one of the world's greatest needs - The Clarification of Values and Goals! We can then channel our resources to meet the objectives.

OUR SEARCH FOR TALENTS SHOULD HAVE HIGHER PRIORITY THAN OUR SEARCH FOR NATURAL RESOURCES, BECAUSE THE DEVELOPMENT OF THE LATTER IS FULLY DEPENDENT UPON THE FORMER.

Walter Talbot
Utah's State School
Superintendent

6

HUMAN CREATIVITY: COMPETITIVELY OR COOPERATIVELY, ALONE OR TOGETHER

William E. Roweton
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Harrisonburg, Virginia

> I have yet to see any problem, however complicated, which, when you looked at it the right way, did not become still more complicated.
>
> Poul Anderson (1980)

So often creativity is a result of one person, acting alone and sometimes foolishly, against prevailing circumstances. As Carl Rogers (1954) sees it . . .

> I am alone. No one has ever done just this before. I have ventured into territory where no one has been. Perhaps, I am foolish, or wrong, or lost, or abnormal. (p. 256)

Odd, original, unique, bizarre, superfluous ventures into fantasy and chance. And in this abrasive process of the new against the old and traditional, many become disappointed or bewildered, some even become paupers, never understanding why their ideas or inventions garnered suspicion.

> In 1853 Thoreau was informed by his publishers that A Week on the Concord and Merrimack Rivers had sold 219 copies since its publication four years before, so they sent him the remainder. He wrote, "I now have a library of nearly nine hundred volumes, over seven hundred of which I wrote myself." (L'Engle, 1972, p. 215)

Somehow we feel that a respectable struggle makes the creative product more valuable. Struggling against the apparent probably renders more victims and discouragement than it does victors and elation. Nonetheless, many biographies of original individuals confirm the association between conflict and creativity.

What are the chances of a boy who begins speaking at three years, who vehemently opposes prescribed school curricula, and who would much rather work alone? What about this same lad twelve years later as a school dropout who would rather travel than study and who barely passed the necessary examinations to graduate from a polytechnical school? This person's biographers tell us that the only reason he passed his courses at all was through the generosity of a friend, Marcel Grossman, who attended classes regularly and took notes for him. In school, he was

obstinately independent. One of his teachers quipped, "You will never amount to anything . . ." (Broad, 1979, p. 8). After graduation, our creative subject obtained a job as a third-rank clerk in a government patent office through the political influence of Marcel's father.

In 1901, a year before taking the patent office job, he submitted a Ph.D. thesis to the University of Zurich for evaluation; it was rejected. Nonetheless, while a clerk between 1902 and 1909, he fiddled on his "theories" while the office supervisors were not looking; his scribblings were quickly hidden on a second's alert.

During these years as a clerk he did not subscribe to any scientific journal; he did not have the use of a scientific library; he had no peers with which to confer. However, he published four short, monumental papers in 1905 in Annalen der Physik which eventually altered human life. He left his patent office job in 1909 to accept a professorship at the University of Zurich.

And what did Albert Einstein say about all this? "I have no special gift . . . I am only passionately curious" (Broad, 1979, p. 8).

Limits, struggle, resistance are such commonplace components of everyman's creative experience; some writers, like Rollo May, highlight its significance:

> . . . limits are not only unavoidable in human life, they are also valuable. Creativity itself requires limits, for the creative act arises out of the struggle of human beings with and against that which limits them. (May, 1975, p. 113)

Conflict, struggle against the odds, resistance at all costs, and "whip lashes from life"[2] are American prices for well-earned prizes. Red-hot competition is the color of the blood in our national veins: a kind of all-cards-on-the-table, O.K. Corral shootout. While we have drifted away from rugged individualism to become a nation of organizations, vestiges of our frontier mentality remain. Looking at creativity, one exploring individual at a time, focuses inevitably on personal courage, perseverance, sensitivity, mental health, and, so often, struggle.

Seldom now do America's creative ranks abound with futuristic loners and emplorers scaling insurmountable odds; we have more schemers than dreamers. Life for most of us depends upon organizations immersed with work that is capital intensive and energy dependent and wrapped with unfathonable layers of bureaucracy.

Writing about American science, Theodore Roszak concludes:

> . . . its heroic age has ended. The day of the great lone wolves, embattled heretics, and outsiders--the Faradays, The Galileos, the Pasteurs toiling away in modest laboratories and private garrets with makeshift equipment--is at least two generations behind us; and not only gone but never to be recovered. (Roszak, 1973, p. 207)

Creativity and Competition

The organizational America that wholeheartedly supports teams at great cost and less individual initiative has evolved an ethos sometimes inhospitable to creativity.

First, some bureaucracies promote to power individuals who are not particularly innovative. Instead, these bureaucrats are managers, planners, organizers, or whatever else organizational life justifies. Second--at other times--very creative personnel, in response to company indebtedness, are vaulted to organizational leadership. Bureaucratized American science is replete with instances where the most sensitive, insightful, and productive researchers/thinkers are made project administrators, forever removed from data arenas where they are most adept.

> Some people work for status and power, but this does not seem to be the case with a highly creative person. In fact, we probably do a disservice to all concerned when we try to reward him by placing him in a position where he is boss . . . Yet this is a commonly used method for rewarding creative achievement. (Torrance, 1965, p. 41)

Third, our age of bureaucracies, organizations, and teams has fathered systems of "mass manipulation," methods to efficiently and economically affect bunches at one time instead of single individuals. No longer is it just stimulating one's own creativity--although it may really be--or that of a few intimates; rather, groupness expeditiously blurs individual differences. Irregardless of your talents, perceptions, or committedness, all receive the company treatment equitably.

For creativity, productivity, and originality, the "treatment" is so often competition, a technique as grandiously bedecked as sound and successful cultural traditon. (Or, is it? Where is the empirical, purposeful, planful experiment in America comparing the relative merits of competition vs. no-competition?)

What starts as a "game" to prod along productivity in company departments or individuals degenerates (everytime?) into goading, harassment, threat, fear of failure or job insecurity. When resources or opportunities are scarce--or are made to seem that way--how could competition stay friendly? Many believe that it cannot.

At age seventy-eight, Jascha Heifetz, perhaps the greatest violin technician ever, knows that competition, as the prime stimulating vehicle for improving performance, does not optimally develop instrumentalists. In a recent New York Times interview Heifetz (see Rockwell, 1980) commented:

> We live today by computing and competing--I call it the two C's. You don't think, you compete.

Hurry up, practice, competitively perform. Instead of sensitively refining the subtle beauty of creative performance, continual competition promotes busyness, quick achievement, fast accomplishment. Great musicians, Heifetz continues, are produced through intense, sustained dedication over very long periods of time:

> When you learn something fast, you forget it fast. We used to call it the "noble metier." You have to give it time. You can't do it by correspondence--15 easy lessons.

When is competition facilitative?

> If competition is the correct relation of creatures to one another and to the earth, then we must ask why exploitation is not more successful than it is. (Berry, 1977, pp. 107-108)

Wendell Berry's concern is ecology, and for him competition is exploitation. Competition will do neither us nor Mother Nature much good. The broad social implications of Berry's concern are very complex, not simply addressed through either opinion or data. Fortunately, when it comes to competition in schools, helpful empirical research is at hand.

Competition in Schools

Weave education into a decidedly competitive cultural fabric and, not too surprisingly, American school life reflects it. The most exhaustive recent examination of the psychological literature on competition and schooling is that of David and Roger Johnson, the University of Minnesota. Across hundreds of expressions of psychological opinion and experimentation, the

Johnsons compared the merits of competition, cooperation and individualized modes of instruction. What resulted was a plethera of articles (e.g., D.W. Johnson & R.T. Johnson, 1974) and books (e.g., D.W. Johnson & R.T. Johnson, 1975) by the Johnsons and a much better understanding of school competition.

D.W. and R.T. Johnson (1976, p. 156) summarize:

> The way in which teachers structure classroom learning determines the way in which students interact with each other and with the teacher, which in turn affects the cognitive and affective outcomes of instruction.

Regardless of our culture's predilection, pedagogical inventiveness--the sensitive reflections of insightful teachers--need not necessarily be washed down stream by tradition. Teachers do exercise instructional choices sometimes contrary to the cultural current; the Johnsons highlighted three options:

1. Cooperation: each student's goal achievement is positively correlated to the achievement of his classmates;

2. Competition: individual student goal achievement is negatively correlated to classmates' performance, e.g., for you to succeed others must fail;

3. Individualized: each student's achievement is independent of others' performance.

Teachers should not select instructional modes expeditiously or capriciously. A carload of literature indicates that the mode chosen makes differences, cognitively and affectively (D.W. Johnson & R.T. Johnson, 1976):

> There is considerable evidence that (1) most students perceive school as being competitive, (2) American children are more competitive than are children from other countries, (3) American children become more competitive the longer they are in school, (4) urban children are more competitive than are rural children, and (5) Anglo-American children are more competitive than are other Mexican and Black American children. The use of the competitive goal structure in traditional ways creates a learning situation in which students avoid interacting with each other, minimal and often unreliable communication takes place, students

> obstruct each other's work, conflicts are managed destructively, there is peer pressure against achievement, and helping and sharing are considered cheating. (p. 156)

Certain experiments have investigated the effects of variables commonly conjoined with competition, for instance, the plentifulness of materials and opportunity; curriculum objectives, teacher attitudes; exchange of information (Johnson, D.W., Falk, Martino, & Purdie, 1976); age (Johnson, D.W. & Ahlgren, 1976); personlogical factors (Rubenstein, 1977); task complexity, etc. Several studies (e.g., Clifford, 1972; Clifford, Cleary, & Walster, 1972) demonstrate pointedly that competition does benefit performance on "simple" tasks, (e.g., motoric speed problems). Competition's effect on complex problem solving, however, is debilitative.

In contrast, the Johnsons' (e.g., D.W. Johnson & R.T. Johnson, 1976, pp. 157-58) prognosis for cooperative learning, compared to competition, is promising. Briefly listed, cooperative school learning promotes:

(1) higher achievement for all ability levels;

(2) more positive student attitudes toward school personnel;

(3) more benevolent student attitudes toward other students;

(4) enhanced self-esteem;

(5) intrinsic motivation for learning; and

(6) empathy, altruism, communication and conflict management.

Experimental data is scarce when looking specifically at the effects of competition upon creative thinking, one type of the Johnson complex problem solving.

Creativity and Competition

Adams (1968), upon searching for literature to review, wrote, "Research directly relating to the effect of competition on divergent thinking was not discovered by the writer." (p. 188)

In fact, Adams was wrong; a competition/creativity experiment was available from Paul Torrance's University of Minnesota, Bureau of Educational Research, group in a widely circulated volume, Rewarding Creative Behavior (Torrance, 1965). Nonetheless,

I appreciate Adams' plight. Twelve years after his search and with good reference tools, I found only four experiments.

According to Jerrold Abramson's (1976) doctoral dissertation, the first competition and creativity experiment was Torrance (1959)[3]. To paraphrase Abramson's account, Torrance (1959) administered to first through sixth grade students a product improvement activity (PIA), i.e., to improve a toy stuffed dog. Some subjects (Ss) from each grade listed improvements noncompetitively while the remaining Ss produced ideas competitively. The Ss in the competitive condition were told that problem solvers scoring highest for each grade-group would receive prizes. The Ss produced significantly more ideas and were more flexible.

In time, Torrance's (1959) first study was joined with a second one (Torrance & Krishnaiah, 1960); altogether, the evidence must have been convincing for Torrance (1962, p. 458) wrote:

> Competition in grades one through six produces greater fluency, flexibility, and originality in creative thinking tasks. Practice and "warm-up" does not completely eliminate the advantage achieved by competition.

A year later, Torrance (1963, p. 28) mentioned warm-up practice again. However, here Torrance outlines the same experiments (Torrance, 1959; Torrance & Krishnaiah, 1960) in three short and very unsatisfying paragraphs. Details are missing.

Relief arrives with Torrance's (1965, pp. 141-147) chapter-long expose on competition and creativity in Rewarding Creative Behavior, the very one Adams (1968) missed in his literature review. While 199 first through sixth grade Ss were competitively generating improvements for a toy dog for eight minutes prodded along with the promise of prizes, 356 comparable Ss at a separate school received a group warm-up PIA (toy fire truck) before responding individually to the second PIA (stuffed dog). In general, but most notably in the lower grades, competitive Ss outperformed the warm-up children. Competitive Ss scored significantly higher on fluency in grades one, three, four; higher on flexibility in two and four; and had a higher percentage of original ideas in two, three, and six.

In conclusion, Torrance (1965, p. 259) reiterates his faith in competition as creative motivation:

> It cannot be denied that competition is one means by which challenge occurs, and challenge, if not overwhelming, is apparently conducive to creative achievement.

Of course, "overwhelming" for Torrance is an intuitive caveat, not an empirical one.

Appreciation of the Torrance 1965 experiment is reduced by a number of "irregularities." First, grades one through three responded orally on the PIA while grades four through six responded by writing. Although data from the oral versus written subgroups were never statistically compared, all data was still entered on the same tables (p. 144) and on the same line graph (p. 145), thereby encouraging a visual trend analysis. Is there an empirical reason to assume that PIA oral recitation is "equivalent" to written protocols by older Ss? Perhaps the contrasting testing environments--informal, personal, oral versus formalized, group, written--may indeed provoke different behaviors.

Second, experimental treatments were confounded with the testing contexts. The competitive treatment was administered to Ss in only one school in December and the practice treatment to a second school in February. Torrance never statistically accommodated for this, and in fact, he (Torrance, 1965) never described either school to convince the reader of their comparability. Not only is school life and personnel different in two schools, but any educational veteran knows that lively pre-Christmas December is not white and wintery February.

Third, Torrance (1963, 1965) fails also to tell the reader anything about the prizes, that is, the qualities of the extrinsic motivators themselves. Knowing this is essential for experimental replications and comparisons.

The next study was Raina's (1968). Raina administered a pretest (Torrance's Ask-and-Guess Test) and two post-tests (product improvement, unusual uses) to forty ninth-standard (grade?) students in a demonstration high school in Ajmer, a city in Rajasthan State, India. The twenty control Ss received task instructions plus cash incentives: three rupees for highest score; two rupees for second place; one rupee for third. Results revealed that experimental Ss were significantly more fluent and flexible. (Originality was not assessed. Also, Raina did not indicate how he combined the post-test scores.)

Raina (1968, p. 219) concluded:

> Though the findings themselves are not expected, still it invites replications with large and different samples.

Coincidentally, a more robust but disconfirming study (Adams, 1968) was published the same year as Raina's although we needed to wait eight years for an empirical confirmation (Abramson, 1976).

Abramson paid college volunteers $2 each to participate in one of three treatment conditions: noncompetition; individual competition; group competition. The noncompetitive Ss worked ungrouped; the chairs of the participants in the other two conditions were gathered in clusters of seven and simulated group-ness. (It is important to note that participants, even in the group competition, never interacted during problem solving.) Noncompetitive Ss received only standard task instructions; the competitive Ss received standard task instructions plus the promise of a $10 cash prize if they scored the highest in their group; and, in group competition, all participants in the highest scoring group received $10. All Ss received Torrance's (Form A) PIA (toy elephant) plus a parallel lines activity (PLA). For statistical analyses, the size of each of the three treatment groups was adjusted to fourteen males and fourteen females. Results generally followed Torrance: Ss in individual competition scored higher than Ss in the noncompetitive condition on verbal fluency ($p < .025$) and verbal originality ($p < .005$) and significantly higher than Ss in both noncompetitive and group competitive conditions on verbal elaboration ($p < .01$). Group competitive Ss never differed from noncompetitive Ss. Competition did not differentially affect figural creativity, a result without any empirical history and not especially easy to understand.

Adams (1968) offers the only empirical halt to the Torrance-Raina-Abramson tradition. Adams pretested 112 high school Ss, ages fourteen through sixteen using two Guilford tasks assessing spontaneous flexibility. From composite pretest scores, four matched groups of twenty-eight Ss each were formed and then administered one of four treatments:

> Group One -- A control group received standard task instructions;
>
> Group Two -- In addition to task instructions, individuals in the competitive group were urged to score very high so their group would outperform the other three groups. No tangible prizes were offered;
>
> Group Three -- The noncompetitive group was told their scores would not be compared to any other group;
>
> Group Four -- A noncompetitive-receptive group was told that their scores would not be competitively compared, but they were also encouraged to "feel free to answer as you wish."

For each group, Adams generated a composite spontaneous flexibility score based on four Guilford tasks. The noncompetitive-receptive Ss (Group Four) were significantly more flexible than the other three groups; Group two, the competitive Ss, were least

flexible. The control and noncompetitive groups, groups one and three respectively, did not differ significantly from one another in flexibility. Unfortunately, Adams did not assess originality or fluency, the commonly-employed Torrance dimensions, and inter-experimental comparisons were difficult.

Summary and Sentiment

What has resulted after five empirical looks at the effect of competition on ideational creativity and after nearly twenty-one years of erratic tinkering is a demitasse cup full of insipid brew. First, the sampled literature offers no experimental replications. Instead, the literature displays an array of tasks, measurement procedures, Ss, testing contexts, etc. Second, the experimenters sampled, again without replication, a range of motivational devices for competition. Experimental options spanned from intrinsics like personal satisfaction to tangible extrinsics like money and prizes. The importance of motivation, especially how it interacts with individual perceptions, is paramount. Participants bring to experiments experiences and attitudes about competition, prizes, money, creativity, etc. Competition or cooperation or individualism--to borrow the Johnson terms--is as much the phenotypic arrangement of the environment as it is the Ss' set, to borrow a Gestalt term. None of the experimenters addressed attitudes.

Third, one must wonder whether the Guilford-Torrance type of creative tasks is sufficient. Is thirty minutes of paper-and-pencil testing on novel tasks in a contrived exercise a satisfactory sample of creative behavior and competition? Playing a game with a stranger-experimenter is not common school fare; contrived circumstances commonly produce contrived behavior (see Bronfenbrenner, 1979). Wondering how the experimental experiences articulate with the Ss' life experience is another concern that none of the experimenters confronted.

Torrance (1965, p. 141) reminds us of one more important yet slighted consideration:

> It does not tell us anything about the cumulative effects of competition on creative behavior.

Again, the "meaning" of competition for experimental participants depends on each child's history of experiences. If the accumulated experiences are debilitative--and many children report that they are--additional competition could hinder creativity, behavior normally sensitive to threat, anxiety, fear of failure, etc. Perhaps due to the uniqueness of the experimental experiences, the Ss perceived these creative tasks as discontinuous with their school life and could momentarily suspend their learned reactions toward competition.

However, even after listing all these concerns, the data does not change in sympathy. So, it still must be admitted that competition, at least in four experiments, facilitates creativity, at least as measured here. However, the "generalizability" of the results is difficult to ascertain.

Competition is a social tool used widely by the culture and its schools on children and adults to promote performance. Competition is applied wholesalely like a magical elixir without enough regard to the S's characteristics, to the nature of the creative task, to environmental constraints, or to motivation. What effects competition and its corollary variables have across individuals, circumstances, and types of creativity is not known, and, at present, sentiment outpaces the data. The empirical answers are not available.

What is best for creativity? Competition? Cooperation? One-ness? Organizations?

Fortunately, answers are not restricted personally or professionally to certitudes emanating from experimental pshchologists. Experiences and traditions tell us convincingly that external conditions--the working ambiance--interact with the nature of the creative tasks, the qualities of competition, and, most importantly, individual problem solvers.

Some cannot contend with being alone. Others prosper. Sylvia Ashton-Warner, New Zealand's decisive educational reformer, writes how, as a child, she filled the voids of loneliness with imagination and dreams and art and curiosity, especially when she was physically isolated or socially ostrasized.

> . . . the hours I spent on that road. It didn't hurt being alone. "Alone" does not equate with "lonely." You can be quite radiant when alone if your thoughts are . . . In my real school, the road, I wasn't lonely, just physically alone. As well as being a hard worker, I was also a hard dreamer and you're not lonely when your mind is peopled. (Warner, 1979, pp. 100-101)

Place Warner or Einstein or Thoreau or the multitudes of nameless effective loners on a team, prod them along with contrived competition under layers of organizational bureaucracy, and they soon wither. Yet, others bloom. However, for so many creative individuals organizational life is an unproductive whir of busyness, like a living Caucus-race from Lewis Carroll's nineteenth century English fairy tale, Alice's Adventures in Wonderland (see Carroll, 1968, p. 33).

> "What is a Caucus-race? said Alice . . .
> "Why," said the Dodo, "the best way to explain it is to do it" . . . First it [the Dodo] marked out a race-course, in a sort of circle ("the exact shape doesn't matter," it said), and then all the party were placed along the course, here and there. There was no "one, two, three, and away!" but they began running when they liked and left off when they liked, so that it was not easy to know when the race was over. However, when they had been running half an hour or so, and were quite dry again, the Dodo suddenly called out "The race is over!" and they all crowded round it, panting, and asking "But who has won?" This question the Dodo could not answer without a great deal of thought . . . At last the Dodo said "Everybody has won, and <u>all</u> must have prizes."

At least Alice's Caucus-race had utility; she was all wet after swimming in her tears and running about excitedly in all directions effectively dried her.

When organizations fumble ahead by tradition instead of setting the best conditions for different individuals and different tasks, the worthwhileness of company procedures is not as apparent.

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FOOTNOTES

[1]Portions of this paper were presented at the Fifth Annual Northern Virginia Conference on Gifted/Talented Education, Alexandria, VA, 8 March 1980.

[2]A phrase borrowed from Sylvia Ashton Warner (1979).

[3]There is absolutely no substitute for accuracy and clarity in social science writing. Two scientific tools are words and numbers, and we should deploy them very carefully. Without precautions, confusion abounds. My search for the first experimental study of competition and creativity illustrates the problem.

While Abramson (1976) claims a 1959 Torrance Bureau of Educational Research report as the first, Paul Torrance does not. The earlier experiment according to Torrance (1965, p. 141) is contained in a 1961 Elementary School Journal article (Torrance, 1961). A careful reading of this paper did not reveal any mention of competition; instead, brainstorming is discussed. Very confusing.

Torrance (1965) also makes reference to an experiment in Education and the creative potential (Torrance, 1963). This one turns out to be Torrance and Krishnaiah (1960). To what extent the Torrance (1959), Torrance (1965), and the Torrance and Krishnaiah (1960) documents describe the same or similar competition/creativity experiments is impossible to ascertain. Unfortunately, the 1959 and 1960 Bureau of Educational Research reports were restricted circulations.

C'est la vie!

7

GIFTED/TALENTED PASSPORTS: HELPING OUR CHILDREN ADJUST TO THE EXPERIENCE OF MOVING

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Mobility is commonplace for corporate, government, and military families. Various studies of the effects of mobility on families tend to show that the academic achievement of the children is not diminished, but that the likelihood of emotional problems does increase with mobility. T.S. Whyte in The Organization of Man refers to the custom of tree nurseries cutting the taproot of young trees so that they will develop a bulbous but shallow root system. The trees can then be transplanted easily; but trees with shallow root systems are highly vulnerable in storms. Mobile families need to develop the equivalent of portable taproots, supports that can help their children weather the storms.

SHORT RANGE HINTS to ease the actual move and school placement:

1. Tell children as soon as you know about the move, unless they are under nine; then wait until one month ahead. Involve them in the planning stages so that they can learn decision-making processes and have a stake in the outcome.

2. Do take children's hobbies, their things that validate them. Perhaps each child could have a foot-locker to fill as his maximum; then he could do the selecting of items to keep.

3. Physical reactions to the move may include sickness, insomnia, and being accident-prone; these are all indications of stress and are real. The stress may be emotional, with too much happening too fast; some time and loving attention will cure this. Bodily complaints may also be the physical adaptation to a new climate and pace of living (also a pace of teaching).

4. When you know where you are going, subscribe to the new town newspaper, set goals with the family, and discuss goodbyes and the real sadness each person will feel. The first 3-6 months after the move, parents need to give special attention to their children and understand their "grieving period" (grieving for lost friends, teachers, routines, and places); otherwise, the adjustment will be more prolonged.

5. Children will test parents to see if the family rules/jobs will be the same. Continuity of discipline and responsibility is necessary.

6. Parents need to help their children learn the art of "temporary suspension" for the early weeks after a move; do not rush to closure on decisions such as schools, house, organizations to join, friends. Allow time to make careful assessments.

7. As parents of G/T children, consider choosing the school before the house, and do not rely on a real estate agent for school information! Information on the public schools is available in the public information office of the school district headquarters. Ask the average SAT scores for the most recent years (to compare with other school districts in the area). Ask the average percentile on nationalized tests, such as the SRA test; the tests are given at many grade levels and show scores in reading and math. Ask about honors classes, Advanced Placement courses (not only which are "offered," but which actually are given), and accelerated groups. Ask to see the printed school programs.

8. Try to visit schools during the school day to see them in action.

9. When assessing private schools, ask the same questions asked of the public schools plus questions about grouping, the academic qualifications of the staff (most have a list of their credentials - do they have master's degrees in the content area they teach? Do the colleges meet your standards?); if the school is secondary level, where have its graduates gone to college over the last 5 years?

10. In the public vs. private school for the G/T students debate, many educators feel that <u>usually</u> public schools can offer more to G/T pupils because: pure numbers of students allow a greater number/variety of offerings, and there can be more flexibility in scheduling due to the frequency of offering; public schools usually can afford more science and math (computer) equipment; and the growing gap in salaries between public and private sectors is making it difficult for private schools to attract and hold gifted teachers.

11. Sources of information on the "best schools" in an area: your alimni/alumnae association - the Candidates Chairman will know where the best students have gone to school; the Education Committee chairman of the

AAUW (American Association of University Women) in your area; the G/T specialist for your area schools may feel free to suggest that a certain school's program might be most fitting for your child - if you have not already made a housing commitment that would require a waiver.

12. If you are leaving a school system that has tested and provided well for your child: carry copies of the testing scores - the school will, of course, send the official transcript after the new school is determined; ask the elementary school teacher and principal (or the secondary school counselor) to write a detailed description of what has been provided in order to help with proper placement in the new school. If it seems advisable, they could also comment on the child's social adjustment, as that seems to be a favorite argument against accelerated placement. If you are carrying IQ scores, be sure to note the name of the test and whether it was individually or group administered.

13. If there has been no IQ test, the new school can administer the Slosson Test easily. It is a reading test, essentially, and can give a "ball park" assessment for placement, even though it is less accurate than a WISC or Binet. This is one way of getting around treading water until formal testing can be done.

14. The Johns Hopkins SMPY Program (Studies of Mathematically Precocious Youth) recommends that highly able students take the Scholastic Aptitude Test (SAT) in their 7th grade year, and continue to do so thereafter to measure progress. It is a test readily available wherever you live (check with the local high school guidance office for application forms), and the results are recognized throughout the high school and college communities. One side benefit might be that a student would have the scores in case of a decision to enter college a year early...a decision that might be precipitated by a move.

15. Maintain a copy of the junior high and high school course of study for each child's records for placement purposes. Likewise, a G/T student should hold onto his college catalogs for each year; later resumes and government forms require the name of each course taken plus a summary!

PASSPORTS FOR A MOBILE LIFESTYLE: LONG RANGE HINTS

Passport #1: A carefully planned scholastic program. When your child is ready to enter junior high, set up a basic

plan for his six remaining years of school with the aid of a guidance counselor.

* Go heavy on the "solid subjects" and light on electives so that a move does not find him light on credits and faced with a slew of local requisites.

* Get to know your children's teachers well early in the year, so that you can be partners in your children's development.

* If you move at the end of a school year, go register in your new school immediately so that your children will have a better chance of being properly placed, instead of being put into whatever vacancies exist in the schedule in September.

* Summer school may be a good opportunity to fill holes, do remedial work, take extra courses like typing, and meet friends with whom to enjoy the summer.

* If your G/T student takes college courses while still in high scoool, it is desirable to send him to a college of stature where the students will be his peers (i.e. learn as quickly as he does).

* If a child must move just before or during his senior year, keep a list of the teachers he knew fairly well at the previous school, as well as Scout leaders, minister, and employers; they will be a valuable source of recommendations for college or a job.

* A move before senior year may be excruciating, but it will be a very good preparation socially and perhaps scholastically for going off to college the next fall.

* Make sure you visit your child's college choices, especially if you are currently living overseas. Four years there may be the longest he has lived anywhere, and you need to be sure that the student body will be a good match for his experiences and abilities. (For example, a small mid-Western college might not be the appropriate choice for a Foreign Service youngster who has spent much of his life overseas.)

Passport #2: Portable Achievement. Perhaps more than average, non-moving Americans, our children need to know that they excel in a specific area, whether it be sports, music, or dramatics. It helps them find their niche in a new community, and serves as an emotional outlet, often sorely needed after a move.

* To locate teachers in your new community, inquire at the local university or symphony or art gallery. Also see the list at the end of the article for addresses of national organizations.

* Consider sending your youngster to a summer program or camp that specializes in his talent or interest area. Some offer fine credentials for those who are college-bound. Those that offer programs for grades 4-12 can serve as "home" for children who move often. They continue to have the same nucleus of friends summer after summer.

* Keep a good file or scrapbook for each child's achievements; this will be a ready source of information, plus a source of pride when he is feeling lost after a move.

Passport #3: Choice of an individualized sport. Mobile Americans need at least one sport that can be done alone or in pairs (i.e. golf, running, swimming, tennis) so that they do not have to get a group together. This is particularly true for a youngster who moves at the beginning of the summer and must make friends slowly.

Passport #4: Membership in national organizations such as Scouts, 4-H, Keys/Keyettes, and church. Scouts automatically accept boys and girls who have transferred to the area.

* Their programs teach self-sufficiency - a lifetime skill.

* Membership in a church provides an extended family when most mobile families must live away from their own relatives.

* A strong faith gives teenagers an inner strength, a sense of communication with God wherever they may move.

Passport #5: Recognition of the value of creative solitude vs. loneliness. G/T children (and their parents!) need "quiet time" - time for daydreaming, creating, reading, pursuing their interests.

* Parents need to help their G/T children learn how to organize their "necessities" so that they can free up creative time.

* G/T sometimes need help in choosing the number of activities in which they can be involved; their interests and their abilities often make them easy targets for requests from others. Learning to say "no" is a lifetime skill.

Passport #6: A Strong Nuclear Family and Friendships. Our G/T children need continuous evidence of our love for them. They also need the consistencies of absolute standards of behavior - standards that are the same wherever they move.

* G/T children usually like the change that a move brings; they see it as a way out of monotony, predictability, and see it as a chance to test themselves... with your support.

* The period immediately following a move is a time of intense dependence on the nuclear family unit because members have not made new friends yet. There is a sense of isolation as individuals and as a family. It is a good time to continue family traditions, to explore the new community together (the more one knows about an area, the more he feels he belongs), and a time to consider joining one organization as a family (such as a science center or museum). Families in the Washington area who join the Smithsonian find that they are likely to focus much of their family activity there because they started there - instead of adding it later to a myriad of activities that each separate member of the family has joined.

* Family decisions give G/T children an opportunity to practice problem-solving techniques, and their involvement teaches them how to be supportive members of a family unit as well as responsible independents.

* Being valued members at home gives them the confidence they need to seek out new friends. Part of the process of friend-making is being vulnerable - both in the beginning of the relationship, and at the point of separation. Adolescents who have moved too frequently tend to withdraw so that they cannot be hurt by yet another move. We know that the strains accompanying moving are cumulative. We need to help our children understand that the joys of friendship are worth the risks they take. G/T children especially need one good reliable "buddy" for their freedom to really be themselves and be cherished for it.

* Parents can help their children maintain their special friends by visiting for vacations and inviting the old friends to the new location. Mobile families must learn the art of relishing their past and present while keeping a confident eye on the future.

I. Materials for an Overview of Moving and a Mobile Lifestyle*

Changing Families in a Changing Military System. ed. Hunter, Edna J. Symposium Proceedings: Military Family Research Conference, 1977. Family Studies Branch, Naval Health Research Center, Code 8090, San Diego, Calif. 92152. (free)

Families in the Military System. ed. McCubbin, Hamilton I., Dahl, Barbara B., and Hunter, Edna J. Sage Publications, Inc. 275 South Beverly Drive, Beverly Hills, Calif. 90212, 1976. Of special interest: "The Adolescent Experience in Career Army Families" by Paul Darnauer.

Giammettei, Helen and Slaughter, Katherine. Help Your Family Make a Better Move. Garden City, N.Y.: Dpib;edau. ;070.

Navy Family Program brochure due to be published summer 1980: "Making a Home in the Navy: Ideas to Grow On." Available from the Navy Family Program, OP 152, Washington, D.C. 20350.

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Pierson, George W. The Moving American. New York: Knoph, 1972.

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*Check your local library for all of these materials. Perhaps suggest that a copy be ordered if not already owned.

II. National and International Organizations and Sources of Information

Consumer Information Center, Pueblo, Colorado, 81009. Ask for the Consumer Information Catalog (which lists free and low cost publications). Of special interest: "What If Your Child is Gifted" (#523H), "Student Guide-Six Federal Financial Aid Programs" (#537H), plus many free booklets for children (great for car treasure box).

National Association for Gifted Children (217 Gregory Dr., Hot Springs, ARK 71901). Membership $20.00 includes "Gifted Child Quarterly."

MUSIC:
Music Teachers National Asso. (2113 Carew Tower, Cincinnati Ohio 45202). Contact for local association and reference for teacher.

Trinity College of Music (Mandeville Place, London, W1M 6AQ, England). Examinations in 33 countries for music theory and performance on 17+ instruments.

Mu Phi Epsilon, National Executive Office, 1645 S. Bascom Ave., No. 3, Campbell, Calif. 95008. International professional music fraternity - contact to locate local chapter as source of local teachers.

III. Testing and College Information

College Board Admissions Testing Program, Box 592, Princeton, New Jersey 08541. SAT (Scholastic Aptitude Test) and ACH (Achievement Tests): local high school usually has forms.

Educational Testing Service, Box 922, Princeton, N.J. 08541. SSAT (Secondary School Admission Test): used for private secondary schools.

The College Handbook (1979-80) and The Index of Majors. New York: The College Board, 1979. (Library #R378.73 C697). They can be ordered from College Board Publications & Orders, Box 2815, Princeton, 08541. ($9.95 & $7.95)

IV. G/T Edcuational Offerings - Regular School Year

booklet: "Boarding Schools" (free from 4 Liberty Square, Boston, Mass. 02109)

Directory of Educational Programs for the Gifted by Lavonne B. Axford. Scarecrow, 1971. (Library #R371.95 A969D)

V. Summer Programs and Camps

Porter-Sargent. Guide to Summer Camps and Summer Schools. Published annually by Porter-Sargent, 11 Beacon St., Boston, Mass. 02108 for $9.00 + $1.50 postage. (Library #R373). This guide offers quite a full listing of offerings by subject, talent, and sport.

Types of Programs you might consider:

American Dance Festival (P.O. Box 6097 College Station, Durham, N.C. 27708). Conducted on Duke University campus: full range of dance classes.

Girls Scouts of America (830 Third Ave., N.Y., N.Y. 10022) "Wider Opportunities" for national and international centers plus local and state council camps.

Carnegie-Mellon University (Pre-College Fine Arts Program, 5000 Forbes Ave., Pittsburgh, PA 15213). Coed grades 9-12: 6 weeks. Courses in architecture, art/design, drama plus social, cultural, and recreational activities.

Chautauqua Summer School (Box 28, Chautauqua, N.Y. 14722). Coed, all ages. Music, the arts, theater and dance plus recreational activities.

Choate Rosemary Hall (Director of Summer Programs, Wallingford, Conn. 06492). Coed, grades 9-12. Academic Session is 5 weeks; includes photography, architectural design, theater arts, literature/composition, Short story/short novel, etc. Travel Programs include bicycle tour through national parks, France, Spain.

Culver Summer Camps (Culver, Indiana 46511) boys & girls, ages 9-17. Separate programs - boating, horsemanship, aviation, and woodcraft.

Harvard Summer School (20 Garden St., Cambridge, Mass. 02138). Full offering of academic and special courses to high school age and up.

Harvard Graduate School of Design Career Discovery Program (Gund Hall, L-37, Cambridge, Mass. 02138). Age 16 + completion of junior year in high school and up. Offers non-credit career exploration of fields of architecture, landscape architecture, and urban planning.

Middlebury College Language Schools (Middlebury, VT 05753). Undergrad. and grad., 9 weeks of intense language studies.

National Music Camp (Interlochen, Mich. 49643). Coed: age 8-univ. Provides courses in music, art, dance, and drama plus an outstanding recreational and athletic program.

The National Shakespeare Company (Summer Conservatory held at Kerhonkson, N.Y. 12446) but for information: 414 W. 51st St., N.Y., N.Y. 10019. Coed: ages 16 and up. 8 weeks. Courses in basic & advanced theater arts.

Northwestern University (Office of Admissions, 633 Clark Street, Evanston, ILL. 60201). Performing arts and journalism.

Outward Bound, Inc. (384 Field Point Rd., Greenwich, Conn. 06830). Coed: minimum age varies with specific courses. Courses in several locations range from rappelling, cycling, canoeing, etc. Strenuous mental and physical challenge.

Challenge/Discovery (Box 229, Crested Butte, Colo. 81224). Ages 14-16. 23-26 day courses in mountaineering, kayaking.

Rhode Island School of Design (Summer Program, 2 College St., Providence, R.I. 02903) Coed, ages 15-17; 5 weeks. The Pre-College Foundation Program offers visual arts workshops and studio work with faculty evaluations that may serve as college recommendations.

Exploration at Wellesley College (info: Ann & Arnie Singal, 124 High Rock Lane, Westwood, Mass. 02090). Coed, ages 13-18; 3-6 weeks. Academic, enrichment, and career fields; over 25 workshops in areas such as math, business management, physics, drama, law, psychology, photograph, medicine, and music.

Great Hollow Wilderness School (Wesleyan Univ. operates in New Fairfield, Conn. 06810) for info: Peter Budryk, Wesleyan Station, Middletown, Conn. 06457. Coed, ages 12-18. Backpacking, canoeing, mountaineering.

Center for Creative Youth - Wesleyan University (Middletown, CT. 06457). Coed, entering grades 10-12; 4 weeks. Programs in music, visual arts, theater, dance/movement, and creative writing.

8

THE PRINCIPAL: CATALYST OR ROADBLOCK?

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The wheels for gifted education have once again been set in forward motion. In the 80's, educators will need to place a greater importance on providing a more appropriate instructional program for the gifted/talented students. Even though the interest in the gifted may wax and wane through the years, the actual need for improved programs for these students remains constant. Sometimes referred to as the most neglected minority, thousands of brilliant, talented students are languishing in schools at all grade levels and functioning far below their ability levels. Recent studies conducted by the U.S. Office of Education have shown that bright children forced to endure routine curriculum may turn off, tune out, and/or become behavior problems. Gifted students presently account for up to 20 percent of high school dropouts. Not only does this mean that talent is going underdeveloped - talent this country needs very badly - but also that many of these students find school a boring and frustrating experience.

The latest national effort had its beginning in 1970 when Congress asked U.S. Commissioner of Education to submit a report on what was happening educationally to gifted/talented youth throughout the country (Lyon, 1976). The report revealed the following:

1. Fewer than 4 percent of G/T were receiving services.
2. 57 percent of school administrators said that no G/T were in their schools.
3. Ten of the 50 states employed a full-time G/T person.
4. G/T come exclusively from upper middle class and wealthy families was a prevailing myth.
5. G/T will easily achieve success on their own was a prevalent feeling.
6. Considerable hostility was directed toward G/T.
7. Only twelve universities were offering graduate level courses for teachers on gifted education.

In 1972 the U.S. Office of Education (USOE) began national efforts for the gifted through:

1. Strengthening state leadership through the National Leadership Training Institute whose mission was to train five leaders in each state.

2. Regional awareness conferences on the culturally different gifted.

3. Localized programs for parents, administrators, and school board members.

It was most discouraging that a later federal report indicated that the modest accomplishments and aspirations of USOE were met with "apathy and even hostility" among teachers, school administrators, guidance counselors, and school psychologists. Depending on how the terms are defined, between 3 and 5 percent of the nation's students are gifted. Despite the national efforts and the current concern for the gifted, federal education officials estimate that fewer than 20 percent of the nation's gifted children are enrolled in special classes (Rice, 1980).

Providing programs to meet the needs of gifted and talented students is a major challenge and responsibility of the principal and staffs of every school. Newland (1976) indicated that the test of the merits, integrity, and effectiveness of school programs for the gifted is largely based on the extent to which school principals understand and accept the need for such programs, realize their essentiality, and are both willing and able to proceed in terms of their convictions.

According to Martinson (1972), the attitudinal factors fo principals are of great influence. Any principals who have attended a meeting of their peers in which planning for the gifted has been discussed undoubtedly have heard one or more of the following questions or comments:

"Isn't what is good for the gifted good for all children?"

"We don't have proper tests or identification."

"The gifted have all the advantages already."

"Won't special programs create snobs (or problems with parents)?"

"Gifted programs support elitism."

"The gifted can take care of themselves."

These comments or questions reveal more about the principal's attitudes than his/her insights and knowledge. If a program is of the proper level and caliber for the gifted, it would be cruelly difficult for others.

Stoops (1975) identifies the school principal as having a vital role in the functioning of any special education progr.

and should be well-prepared for the task. It is essential that the principal be aware of the needs and means of providing programs for educating exceptional children. He/she must be able to interpret exceptional children, their needs, and their abilities to create a climate within the school conducive to their acceptance, especially when the gifted programs are located in regular school settings. The principal needs to be able to plan inservice experiences which would include teachers' observations of teaching demonstrations, attendance of professional conferences, and visitations to observe other special schools and classroom situations. Also since parents of exceptional children have many concerns and special responsibilities, the principal should be skilled in counseling and assisting them.

Gowan and Demos (1964) viewed the role of the principal having a gifted program in his/her school as revolving around seven keys.

1. Has responsibility for establishing a school climate that promotes the gifted program within the school as a part of the total school curriculum.

2. Involve faculty members as well as the community in a cooperative planning process developing the curriculum the gifted will follow.

3. Should have the sole responsibility for selecting the personnel that will be involved with the gifted program.

4. Must be involved in establishing and maintaining positive community relations by keeping the public informed about the gifted program and by being extremely careful not to overemphasize the gifted program by keeping it in perspective and relation to the entire program for the school.

5. Responsible for providing the guidance necessary for the staff, students, and parents concerning the program, and problems relative to it.

6. Main responsibility for providing meaningful inservice training for their staff.

7. Conducting continuous evaluation of the program and looking for areas that need modification.

In order to fulfill this role principals must maintain their own level of proficiency in the field of gifted education.

Syphers (1972) writes that in no other area of the education of exceptional children is the principal's commitment more critical

than in the education of gifted children. In other fields of exceptionality, teachers are more likely to have had specialized training and to have small classes. There have always been teachers, who because of their own intellectual capacities and empathy for bright children, have provided a stimulating learning environment. In the modern school, however, with the yearly change of teachers, such piecemeal offerings do not sustain a bright child who returns to the "treadmill" of the same program for all. The difficult business of being a school principal has been added upon in the last decade by the concern of equalization of opportunity. In the confusion about appropriate standards a principal who interprets equal as identical will be forced to the wall of mediocrity. Programs for gifted have been tried but rarely without dilution and compromise. Without a principal's active involvement on a continuing basis, a school can have a "program for gifted" on paper and proceed with business as usual, scarcely changing the quality of the school experience for the gifted child.

Newland (1976) reports that the preparation of administrators, the criteria for employing them, and status accorded them by the community influence the quality and extent of the educational programs they design for the gifted. He states, "any undertaking in the name of the gifted that lacks sound philosophical undergirdings, particularly in the case of the administrator, and that is not executed in terms of sound psychology must be regarded as so much window dressing." Newland also found that introduction by the teacher of even sound instructional provisions without administrative philosophical support usually results in failure of the innovation. Principals should be committed implicitly to the encouragement of educational practices which are more preventive than remedial in nature, thus encouraging the making of provisions for the gifted early in their school lives. They would also encourage the incorporation of remedial and corrective provisions for those children who come into their schools from situations where they had been overlooked or educationally mistreated as well as for those chidlren with whom the early provisions within their schools have not been effective. The principal should not see such a gifted program as a "frill" or an an "extra" than he would see the need for a fourth wheel on an automobile.

Newland emphasizes that administrators should be fully sensitive to the fact that the mandating of gifted classes does not always ensure the operation of differentiated instruction which they imply. Principals should be fully aware of the need for freedom of movement and direction in education as of the dangers of regimentation. They would recognize the need for change in educational methods and content, but in the sense of adopting to changing technological and social needs rather than changing for change's sake. Administrators must take care in the selection of properly qualified personnel and capitalize upon the teachers' strengths and capabilities.

Kaplan (1974) identified the following eight responsibilities of principals of gifted programs:

1. Become knowledgeable about the unique needs of the gifted.

2. Become acquainted with gifted students in the school.

3. Stimulate interest in and concern for the gifted.

4. Urge teachers to provide qualitatively-differentiated programs for the gifted in their classrooms.

5. Cooperate with district personnel in identifying the gifted and implementing programs for them.

6. Encourage and assist teachers in securing appropriate instructional materials for the gifted.

7. Meet regularly with parents to explain the program to them.

8. Work cooperatively with other personnel in objectively evaluating the program.

Kaplan also indicated that the complete foundation of the program was based on the support of the administrator.

The work of several researchers further indicate that principals either promote or impede the gifted program. How a principal recognizes the needs of the gifted/talented and how he/she attempts to meet those needs will be determining factors in how successfully a given school meets the needs of the gifted. That which principals deem important will receive emphasis in the school program. The key to success of gifted programs in the 1980's is a principal in each school that is committed to meeting the needs of <u>all</u> students.

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9

DIFFERENTIAL EDUCATION FOR THE GIFTED SYMBOLOGY: A FUNDAMENTAL APPROACH TO THE STUDY OF THE FUTURE

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Our society must acknowledge that not only the United States but the world as a whole is passing through the greatest transition ever known to history. Social and technological change has engulfed the world and there appears little probability that things will ever again be as they were. We are living in a period of accelerated change and increased complexity which bring to bear a different set of needs and purposes for communities in the world of tomorrow. Developing a sense of global cooperation is a critical objective for the survival and growth of the world's people. A better understanding, planning and the general improving of relationships within the human community is necessary in order to develop a spirit of global community and interdependence. With this compelling objective in mind one must ask two important questions: (1) what education is relevant to the survival and growth of the communities of the world, and (2) what type of learner is most receptive to this education?

There is a need for an education which develops people who are prepared to help solve society's emerging problems, who can articulate their own needs and in the process understand the needs of others, and who can go on to create new goals and develop new forms of learning and achieving. The skills which need to be taught in this new education are those of articulating one's own deepest feelings and ideas, and empathizing with the conflicting opinions and aspirations of others. Thus, we need a new education for a new millennium: an education which incorporates the study of the future, which has as its ultimate purpose the determination to help people create a better life for themselves.

It is difficult to define the nature of the study of the future because the future is hypothetical. It has even been said that since the future does not exist it cannot be studied. The introduction of thought on future studies in education is in itself a wave of educational change. However, if the study of the future as a direction for education rather than a theme within edcuation is defensible, it must go beyond the conventional curriculum of today. The introduction of the study of the future into education involves not merely adding new content to the existing curriculum, but altering the structure of the curriculum as well.

With thousands of journals published every year, with the body of knowledge doubling every ten years, curriculum developers often find it difficult deciding what to include or delete, where to begin and what to highlight. Consequently,

curriculum continues to be disjointed by the encouragement it lends to teaching pieces of knowledge which place little or no emphasis upon their relationship to the whole of knowledge. It is impossible to fully comprehend any bit of knowledge without considering its place within the whole. The curriculum of this new education of the future must transmit an understanding of the unity or interconnectedness of knowledge. This new curriculum should be a part of a larger and more extensive structure of knowledge. Thus, when we ask what curriculum changes will make education relevant to the future, what we must do is develop an epistemological curriculum which takes into account the openness, uncertainty and probability of the future. This appeal for an epistemological education which does accomodate the study of the future is the outreach toward the knowledge relating to the dual task of understanding human potentiality and that knowledge which relates to its utilization. The major purpose of utilizing an epistemological approach to the study of the future is to extend the learner's range of experiences into all major branches of knowledge as well as the structure of knowledge itself. This type of curriculum approach not only allows for the flooding of new knowledge, yet to come, but also tends to enable the learner to understand and deal with the complexities of change.

Philip Phenix's Realms of Meaning (1964) represents a recent attempt to organize existing knowledge. This epistemological system provides a basic structure for curriculum development. In Phenix's system there are six divisions or classes which are grouped by common properties. These classes, or as Phenix refers to them, "realms," include: (1) symbolics (2) empirics (3) esthetics (4) synnoetics (5) ethics and (6) synoptics. Instruction in all six realms or classes is relevant and necessary to the curriculum in order to provide a better analysis of meaning through understanding the relationships among the various parts to the whole. However, upon close examination of Phenix's Realms of Meaning, one may state that the realm or class of symbolics is fundamental to maximum understanding of the meaning of the other realms of knowledge. Philip Phenix stated, "These symbolic systems in one respect constitute the most fundamental of all the realms of meaning in that they must be employed to express the meanings in each of the other realms." (p. 6)

Symbology, the study of symbols, which in essence is the study of meaning, can be called the study of representation. Symbolics represents a basic pattern of meaning which is the structure that has been created as an instrument for the expression and communication of meaning. Thus, symbols are essentially tools of thought. Symbology provides a perspective upon the nature of all branches of knowledge by seeking to study the use of images and their associations.

The study of symbolics or the study of meaning can help the learner to identify and define the meanings or symbols generated by others, thus providing a critical tool for forecasting the world community's response to the problems of the future. To maximize this understanding of human complexities a knowledge of complex meanings is necessary. Therefore, if symbolics is fundamental to all knowledge then it can likewise be viewed as fundamental to the study of the future. An epistemological curriculum approach to the study of the future may well be the most exciting intellectual enterprise in education today.

Curriculum approaches which attempt to deal with the impact of the present upon the future are typically viewed as infinitely complex, too abstract and often unmanageable, making it difficult for most teachers to implement and difficult for most students to understand. In order to successfully utilize the symbolic approach in the study of the future, learners who have the potential to comprehend the complexities of symbolic patterns and systems, and to express their perceptions of higher order abstractions must be involved in this type of education. The gifted, by reason of their superior abilities can, through the study of symbols, understand and express meaningful and relevant thought about the future. According to Virgil S. Ward's principles of Differential Education for the Gifted (1961) the differential nature of this type of curriculum approach provides optimal learning which adds conceptual depth. The gifted who possess an exceptionally high intellectual ability and who can perform the necessary roles which persons of lesser intellectual ability cannot perform are well suited for imagining possible futures, predicting probable futures and deciding about preferable futures.

A brief outline of Phenix's realm of symbolics suggest a parallel component of the total curriculum design which is differential due to its highly complex structure and thus is more appropriate for the gifted learner. Philip Phenix believes that symbols include at least two basic components: (1) basic sound or visual elements and (2) elements of meaning (p. 69). These elements of meaning range from concrete concepts to abstract concepts in addition to varying degrees of each. Philip Phenix also stated, "that symbolics serve as tokens of intellectual signification" (p. 64). He presents a hierarchy of symbols in relation to their degree of abstraction. Those symbols which represent a deeper concept of meaning are the more abstract. This general hierarchy consist of three major sub-divisions. These major sub-divisions are: (1) ordinary language (2) mathematics and (3) nondiscursive symbolic forms.

Ordinary language basically means the forms of discourse employed in everyday speech and writing with the object of language being communication. The subject matter of language is the formal structures of symbols by which meanings are expressed.

As Philip Phenix stated, "To learn a language is to master the formal symbolic systems by which the meanings of a particular community of discourse are expressed." (p. 70) The abstractness of language is the source of its power to express an infinite variety of experiences and to represent the real world in all its depth and complexity. Phenix goes on to state, "By this miracle of language the boundless world is opened to shared understanding." (p. 70)

The sub-division of mathematics within the realm of symbolics refers to symbols which are theoretical by nature. Another way of expressing the essence of mathematics is to say that it is a language of complete abstraction thus when compared to ordinary language, mathematics is more abstract. Basically, mathematics is concerned with assigning arbitrary symbols for the expression of time, space, volume and quantity.

According to Phenix (1964) the sub-division of nondiscursive symbolic forms are used in all of the arts and for the expression of feeling, values, commitment and insights into the domains of personal knowledge. In general, nondiscursive symbols are more abstract than ordinary language and, as abstract as mathematics. Phenix presents several levels of nondiscursive symbols which he places in a hierarchical pattern from abstract to more abstract. These levels include: (1) bodily gestures (2) facial expressions (3) manners and customs (4) ritual (5) graphic or object symbols (6) myths, allegories, parables, fairytales and (7) dreams.

Bodily gestures and facial expressions are both considered accessories to ordinary language where as manners and customs are viewed by Phenix as an elaboration of bodily expression thus providing a more complex language. A major characteristic of ritual is that it is more stylized than manners and customs in addition to being less individual. The graphic or object symbols are used to express the more profound meaning in human existence. Myths, allegories, parables and fairytales are uniquely abstract according to Phenix in that they use ordinary language in an extraordinary way. Dreams, which are significant to the dreamer represent a language of inner communication which we know little about.

This delineation of Philip Phenix's symbolic realm provides a curriculum component which is based upon the ideal of logical patterns. Knowledge, as a body of information, has patterns or structures, and an understanding of these structures is essential for the guidance of the teaching and learning of the gifted student. As Philip Phenix (1964) stated, "the various patterns of knowledge are varieties of meaning, and the learning of these patterns is the clue to the effective realization of essential humanness." (p. x) This provides the key to a better understanding of present relationship within the human community which is necessary for the future development of a global,

interdependent community. In this manner the entire range of basic meaning may be chartered, and the structures and inter-relationships of the various parts may be better understood through the use of symbology as a fundamental approach to the study of the future.

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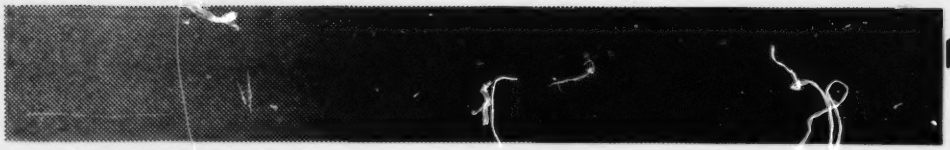

10

WORKING WITH THE SPECIAL PERSONALITIES OF GIFTED ADOLESCENTS

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Gifted young people have more than unique intellects and talents in certain fields. Their deep involvement in the fine arts, humanities, sciences, and leadership reflects their personalities in the choice of interest areas, the creative process by which they manipulate their materials, and the resulting outcomes. Awareness of the importance of personality in gifted adolescents can mean a more satisfying and productive experience for all involved with these individuals as well as for the youths themselves.

Creativity and Giftedness

The terms "creative" and "gifted" are often used synonymously in the literature. Creative as defined by MacKinnon (1962) includes an unusual or novel product which solves a problem and involves the capacity to devise, sustain, and elaborate an original insight. Creativity considers a quality of output plus a certain personality style of the doer. This definition is broad and inclusive, assuming sufficient intellectual ability to conceive and evolve an insight into an output. Similarly, Renzulli (1978) says giftedness involves interaction among motivation brought to solve a problem or a specific performance area, above average ability, and creativity. Unique skills and contributions in performance areas such as academics, leadership, visual or performing arts are products.

Definitions of giftedness are more specific than those of creativity in naming product areas and intellectual levels. This is a pragmatic step to make special programs in education easier to implement. Students who meet the criteria are considered "gifted" or creative in a certain field. Otherwise both terms deal with the interaction between intellective and nonintellective factors which result in a novel quality of output. Ways of manipulating data which are influenced by motivation and personality rather than by intellect alone are important in identifying creative, gifted-in-a-particular-area individuals.

The gifted adolescent has many personality characteristics which set him or her apart from age peers. Dellas and Gaier (1970) review the literature relating creativity and intelligence and conclude that creative persons are distinguished more by interests, attitudes, and drives than by intellectual abilities themselves. Thye also cite data pointing to the personality similarities between creative adults and creative adolescents, suggesting that these affective dimensions may be vital determinants

of creative behavior not just traits developed in response to recognition of such behavior. Likewise, Hudson (1966) comments that the roots of creativity seem to lie in the personality and motivational aspects of character rather than in convergent or divergent thinking styles alone. Martinson (1974) further remarks that the differences between the gifted and their chronological age group are often great, academically and psychologically. The higher the capability, the greater the problems of adjustment.

If affective components appear to be critical variables in determining creative behaviors present and future, their presence is important in selecting students for gifted programs. Furthermore, misunderstanding or misuse of these dimensions by gifted adolescents or significant adults in their environment may inhibit their use for productive or satisfying ends.

Identifying Gifted Students

Given the importance of the gifted adolescents' affective characteristics, these variables deserve attention in nominating, including, and allowing continued participation in special educational programs designed for the gifted. Motivation to work on developing understandings or skills becomes more critical than standardized test scores or excellent grade point averages in selecting and keeping gifted students. Outstanding abilities and high performance are not sufficient criteria for inclusion into the program. Wallach (1976) says these data do not necessarily reflect the potential for creative or productive accomplishment. Drews (1960) and Torrance (1965) conclude that creativity does not develop in high achieving but compliant children. Those very dependent upon peer and adult approval often fail to do innovative work. Wallach notes that tests, if used, might only help screen out persons scoring in the lower ranges.

Thus teacher, parent, and self-nomination for inclusion into a gifted program should consider criteria reflecting affective variables such as persistence, responsiveness, intellectual curiosity, flexibility, inventiveness, enjoyment of challenges, perceptiveness, and independence of thought and action. These are attitudes toward learning which contribute significantly to the individuals' giftedness.

In addition, if already tightly budgeted school funds are to be allocated to a program of differential education above that provided in regular or accelerated classrooms, students must be identified who are clearly different. Selecting students for a special opportunity according to the entire definition of giftedness, cognitive and affective, may provide such a differential population. In one study, Kaplan (1979) finds adolescents selected on these cognitive and affective criteria typically show

significantly greater preference for complexity and abstract problem solving and significantly greater ability to generate many original ideas. They tend to see themselves as more perceptive and insightful about their own and others' behavior, less willing to take a subordinate role in relationships with others, and more willing to use their critical thinking skills on themselves by frankly acknowledging personal weaknesses or limitations as compared with able and achieving but not identified as gifted peers. Selected students also express more readiness to change toward personal growth.

Working Directly With Gifted Adolescents

At a developmental period of dynamic tension between individual identity formation and demands for group conformity, gifted adolescents may find it difficult to be different. Qualities of giftedness may have positive and constructive outcomes if identified, understood, and accepted by the adolescents and the adults with whom they interact. On the other hand, these same dimensions may be misunderstood and misdirected in self-destructive ways. Figure 1 considers such attributes, suggesting how the same underlying dimension may be viewed negatively with possible self-defeating outcomes. For instance, gifted young people often integrate male and female variables within their personalities. They maintain a cross-sex identification using socially defined "female" qualities of perceptiveness, sensitivity, and intuition along with "male" characteristics of purposefulness, determination, and action. Occasionally, a gifted male may be derogatorily and ignorantly viewed as effeminate or a gifted female as "butch" or pushy. If the adolescents accept the negative descriptions by others as their self-image, poor self-esteem, role confusion, loneliness, and lack of creative production may result. If, instead, concerned adults can help the young people identify, understand, and accept these characteristics, the greater the likelihood of integrating these mutually reinforcing qualities into a satisfying, productive union.

Another illustration of potential misunderstanding and misuse of gifted adolescents' personalities comes with their high expectations for achievement. If this goal is unrealistic in terms of the youths' present skills, knowledge, interests, and opportunities, the adolescents may experience boredom, impatience with self, and depression if the outcome is set too low. If the goals are set unrealistically high in view of these factors, the youths may experience fear of failure. This fear occasionally comes masked as perfectionism. The adolescents may then withdraw from the task, giving up the challenge or continue striving without progress or pleasure toward an unachievable ideal. Either approach saves face and the individual can continue to see oneself as successful, despite the lack of a solution. A desire to achieve without the means to reach it

can mean great discouragement, dissatisfaction with self, and little creative production or motivation to try in other situations later. If adults can help the youths regain perspective, identifying limitations in the present situation as well as potential resources, the adolescents may experience high performance commensurate with motivation and abilities and be satisfied with their own performance.

Therefore, adults specially knowledgeable about gifted adolescents' unique personalities can work directly with these youths to improve self-awareness and promote self-acceptance, both keys to effective use of all personality attributes in creative, productive, and satisfying ways. Working with a professional counselor or guidance counselor, individual and group counseling, workshops or seminars on topics such as creativity, the creative personality, obstacles to creative problem solving, fear of failure or success, vocational planning, leadership, and interpersonal relations training may be used to promote the fullest use of the adolescents' selves. Resource personnel from the local community or universities may be invited to present activities on critical affective and vocational issues.

Conclusion

Gifted adolescents have special dimensions in cognitive and affective areas. Current research strongly suggests a vital interaction between these two realms. Personalities of the gifted youths must be a focus to insure a successful and satisfying experience to all involved in gifted education.

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Figure 1

Characteristics of Gifted Adolescents and Possible Outcomes

Characteristic	Positive Outcomes	Negative Outcomes
Integration of male and female types	Integration of sensitivity and intuition with determination and purposive activity; more images available for creative output	Role confusion; withdrawal; escapist fantasies without creative or productive output
Independence; Autonomy	Leadership; imagination; creative because not concerned with impressing others with social "correctness;" makes own decisions and judgments	Withdrawal; bragging; indiscriminate defiance of all authority or social norms
Risk taking	Leadership; confidence in own ability; resourceful in generating creative solutions to problems	Life-endangering acts; foolhardy; social defiance instead of intellectually challenging ideas and creating new order
Openness to internal stimuli	Perceptive; honest self-evaluation; increased self-awareness and self-acceptance; enhanced empathy for self and others; more creative imagery available for originality	Constant self-criticism; withdrawal; escapist daydreaming; loneliness; depression; no creative output; inability to take action in outer world

Openness to external stimuli	Leadership; perceptive; more resourceful in generating possible solutions; keen powers of observation; willing to examine the unusual	Distractible; unable to complete tasks; gullible; indecisive
High expectations for own performance;	High performance commensurate with motivation and ability; productive; satisfaction with own performance	Fear of failure leading to withdrawal, taking the easy way, unrealistically high or low goals; no task commitment; boredom and impatience with self; depression; perfectionism; no creative production and minimal output
Questioning attitude and critical thinking	Generates more alternatives and improved outcomes; develops new ideas and concepts	Cynicism and discouragement; lethargy; discounts legitimate expertise or data; refuses to take any action which is not the absolute best or perfect solution
Dominance	Leadership; social poise; willing to work to achieve ends; persuasive advocacy	Desire to control others by force of argument without considering other valid evidence or audience's beliefs
Flexibility	Able to incorporate the best evidence available for an improved outcome; empathy for others; resourcefulness	Indecisiveness; continual ambivalence which prevents positive action

Preference for abstract, complex thinking	Able to generalize and synthesize large amounts of information; willing to sustain, elaborate, and evaluate an original insight; increased productivity	Occasional resistance to taking directions; neglects necessary details; resents task commitment as mundane
Creative and inventive	Produces new ideas and concepts; a resourceful leader who generates many alternatives	Rejects the known and valid; frustration with conventional learning approaches; resists learning basic skills
Persistent goal-directed behavior	Full commitment to sustain, elaborate, and evaluate a project; productive	Rejects assistance; loses perspective and avoids data which may help in final solution; frustration and anger when unable to complete task to satisfaction; perfectionistic
High energy and alertness	Solves problems of own design successfully; enthusiastic; highly productive	Frustration with inactivity and lack of rapid progress; easily discouraged; anger; pointless activity to relieve tension

Diverse interests and abilities	Multipotentiality for success in a range of fields; finds satisfying vocational and avocational life; chooses best alternatives for effective outcomes	Too many choices available causing indecisiveness; cannot decide on vocational future; starts many projects but finishes few; frustration and discouragement
Tolerance for ambiguity, disorder, and complexity	Uses abilities to create new order or synthesis; potential for creativity; generates many possible solutions; can select unconventional occupations (writer, inventor): can integrate opposing impulses, constructive and destructive, successfully into a creative whole; good sense of humor	Unwillingness to make choices from among alternatives or implement a solution; discouraged by perfectionism; bored with routine so neglects essential basic tasks

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MOTIVATING THE GIFTED TO WANT TO LEARN

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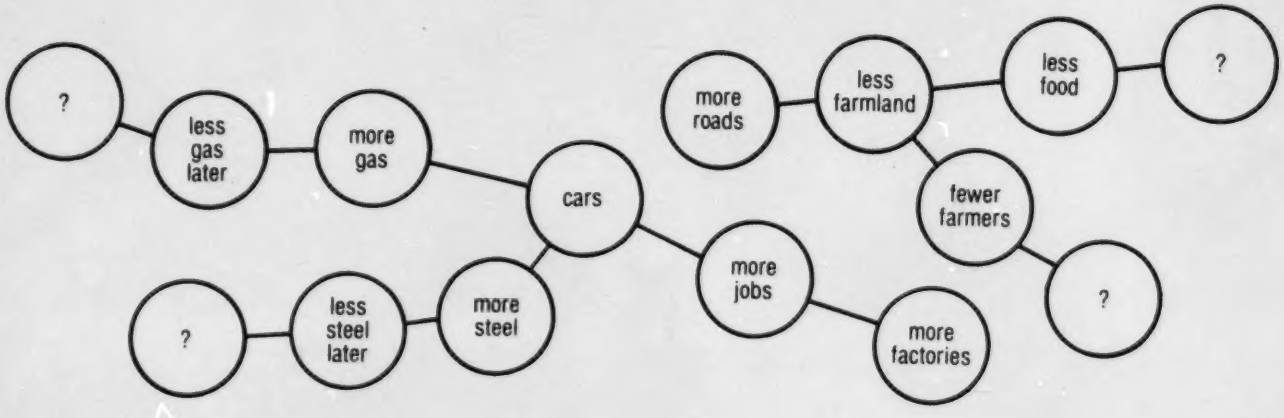
Motivational Process

As suggested by Garrison and Gray (1955), an individual does not motivate others--a teacher does not motivate students. It is more accurate to say that an individual provides conditions by which others are awakened to motives they possess. Students feel motivated when they feel a need to discover for themselves. The teacher can create conditions in which children or young adults awaken in themselves a "need to know." According to Weir (1962), individuals through motivation and personal choices choose the paths their interests will follow through life. Adults can select stimuli for others (such as students), but individuals will respond only to those stimuli which are important to themselves. They are motivated by environments which they create for themselves.

The adult can capitalize on the students' present interests to open new vistas. By introducing Great Books, puppetry, and explorations in physics and math, the teacher can help unlock new and potentially ongoing involvement in related areas. For example, an involvement in puppetry can lead to script writing which necessitates good grammar. An interest in sports can branch into various areas including math and journalism. A simple interest in electronics and computers can lead, under guidance, into something far-reaching.

Having gifted students think about the present and future is so very important. An excercise which can be thought-provoking and interesting to students is to choose topics such as energy, trees, hope, reading or travel, for example. Draw a trend wheel and branch out as to the effects of a given topic. See model below:



Dr. William K. Durr, a past president of the International Reading Association, notes that students who are motivated to learn differ in significant ways from those who are motivated to complete only educational requirements. It is important that the family help set with their children realistic goals and help create conditions in the children which will help to self-motivate them to accomplish these goals. When individuals have definite goals for which to strive, and a moderate amount of success, their self-concepts should rise accordingly. Parents and teachers can have a marked effect on the direction and intensity of motivation of gifted children.

Dr. Madeline Hunter (1975) recommends the following steps in motivating the student to learn:

1. Tension - to a moderate degree
2. Feeling Tone - moderate amount of pleasant or unpleasant tone increases motivation. Excessive amounts are counterproductive
3. Interest - the more interest generated, the greater the learning
4. Success - student should be able to be successful, but work should not be too easy
5. Knowledge of Results - motivation increases as the student knows how he/she is "doing"
6. Relation of Activity to Reward - motivation is compounded when the activity is rewarding and the motivation becomes intrinsic.

Although Hunter does not necessarily write for gifted students exclusively, the writer of this article has put to use her model to motivate gifted students and it has merit.

Tannenbaum suggests that curriculum content alone is not enough to satisfy students' intellectual curiousity. New knowledge must be created. Students need to be taught how to use the ideas they have acquired to create new knowledge. Tannenbaum supports a portion of Renzulli's "Enrichment Triad" (1977) which deals with real-life problems. Productivity in school and in the professional world are combined and strengthened in this model.

Tannenbaum recommends that gifted students be exposed to professionals both in and out of the school program who can work with the students to satisfy their needs in various curriculum and professional pursuits.

The energy with which gifted students pursue goals is sometimes determined by how students feel about themselves. If their self-concepts are positive, they pursue goals with great

enthusiasm. If individuals cannot be independent to evaluate how they are progressing toward their goals, their self-concepts may suffer. The result is the gifted person who underachieves. The use of problem solving techniques can cause individuals to be inwardly motivated. As they experience success, their self-concepts increase and the result is greater motivation.

Taylor (1963) is concerned that only one type of talent is frequently being nurtured--academic. By entending the emphasis on forecasting, decision making, communication, creativity, drama, visual and performing arts, more students have an opportunity to be above average or gifted in at least one area. The academically gifted can often develop their talents further by being exposed to areas such as the above.

Frequently when students associate with groups that value academic achievement, their own motivation toward academic achievement is strengthened. However, when conforming to certain mores, peers of high academic achievement sometimes value less what they learn than models they try to emulate.

It is not certain if gifted students progress from extrinsic (outward) to intrinsic (inward or self) motivation or if they can motivate themselves more easily than the average student. However, gifted students do abstract and generalize quickly and motivation does not need to be prolonged.

If attempting to guide gifted students to self-motivation, the following suggestions may be helpful:

1. let students assume responsibilities;
2. let students evaluate what they have done;
3. avoid routine tasks;
4. give minimal direction;
5. let students use a high level of energy; and
6. let students improve their self-concepts by guiding them to success.

Learning Process

Taba (1963) states that gifted students need to learn by problem solving techniques. They need to:

1. assemble facts plus key relationships;
2. speculate about probable causes; and
3. test answers to see if they are valid.

This method is similar to the steps in any learning process:

1. stimuli;
2. input;
3. integration;
4. output; and
5. response.

Renzulli's (1977) definition of giftedness includes three areas:

1. above average ability;
2. task commitment; and
3. creativity.

He suggests that individuals who are capable of an interraction among these traits need a far reaching program which challenges them and allows them to make the connections. Renzulli and many other researchers conclude that giftedness is more than exhibiting academic ability. The most successful individuals are those with a combination of the traits above. They are able to put their knowledge to work in a creative fashion and finish the task.

The best way for gifted students to learn is not by passive learning but by active involvement. Learning by the discovery method is important because:

1. there is more active involvement by the learner;
2. the student need not be submissive;
3. higher levels of intellectual power are used; and
4. the child can learn to solve his own problems.

Gallagher (1975) is concerned with the way in which adults destroy the creativity and interests in children by having a prescribed method for learning. Even young children, who do not have the formal language necessary for describing what they are doing, can successfully operate on ideas by problem solving. Texts frequently stifle inward motivation and problem solving behavior by presenting information in a logical manner. Problem solving and search techniques are not encouraged or even needed.

The teacher and students need to define the problem together. The only behavior which influences learning is self-discovery. Divergent and convergent thinking are both components of discovery, however divergent thinking is akin to the discovery method in that one discovery leads to another. As one focuses on the results of a discovery or solves a given problem, convergent thinking comes into play.

Summary

The learning process, in general, includes receiving, integrating, and responding. Gifted students follow the learning process best by using the discovery method. The learner becomes motivated and

1. should set tentative goals;
2. direct attention to the goals;
3. engage in preliminary trials and apply previous learning-differentiate and integrate;
4. check to see if responses are correct; and
5. reach the goal.

Individuals respond to the environment that is created by oneself. Adults can motivate others (students) to strive for far-reaching goals by making use of their interests which may open new vistas to further learning.

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SUCCESS FOR THE GIFTED CHILD IN THE REGULAR CLASSROOM

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The key to any kind of special program in the public schools in the 80's will be money. With the dollars shrinking daily and the school population declining, it is logical to assume that the first things cut out of a local school budget will be special programs. Which special programs will probably go first? Possibly, programs for the Gifted and Talented will be the first to be trimmed. A great many people still believe that since gifted children have more to work with, they have the least need for enriched schooling.

Those of us attending this Conference believe strongly in programs for the Gifted. We know how vital they are, and we must continue to fight to keep what we have and to expand programs for the Gifted. However, if, in this time of financial crisis, we witness our programs cut or postponed, we must not abandon our gifted children who are in a regular classroom. They exist now, and they must be served now, not just when the budget permits. As parents, teachers and administrators, who recognize the gifted child's needs, it is within our power to make education a truly meaningful experience for the gifted child, with or without funds.

The gifted and talented child can succeed in the regular classroom. Success depends on prompt identification, teacher interest and concern, and individualized lessons which meet the child's intellectual needs. This task is not easy for the regular classroom teacher who is already stretched very thin. However, with help and support from parents, administrators and other teachers, it can be done.

Programs for the Gifted in the regular classroom can be successfully implemented by following five steps. These five steps are:

1) Check the School Policy on gifted children

2) Check the local school's attitude towards gifted children.

3) Check on how the school identifies the gifted.

4) Find the right teachers.

5) Find out how teachers adapt, or intend to adapt regular assignments; find out how they create, or intend to create, stimulating enrichment material.

Most school boards have some kind of written policy pertaining to gifted children As a parent, teacher, or administrator interested in seeing that the gifted children in your school population are served, familiarize yourself with already existing policies. If there are policies in existence, make them work for you. Too often, the formulation of a policy and its implementation are two very different things. At the same time, if a policy exists, use that as a starting point. Learn to work within a system, success is much more likely than when one tries to "buck" the system. If a policy does not exist, advocates for gifted programs must try to persuade the school board to formulate and implement one.

Once the status of the school board policy is clarified, find out what the attitude of the local schools involved is. Even if the school board is positive toward programs for the gifted, it is possible some or all of the local schools may be prejudiced against such programs. Supporters of the gifted programs must try to change these attitudes. In order to do this, one must be well informed about gifted children, their needs and the kinds of things that are being done for them. It is imperative to work within the system. Most educated people are willing to listen to new ideas and consider new alternatives, if the information presented is done in a positive and knowledgeable way.

There are many false myths and ideas about gifted children and gifted programs. At the end of this article there is a list of ten true-false statements about gifted children and programs for the gifted. All the statements are false, but no audience has ever marked all ten false. There are more than ten myths in the minds of many people about gifted children, but these statements are a good place to start, if one wishes to change negative attitudes to positive ones. When one is capable of pointing out, with facts, why these ten statements must all be false, a good start should have been made in eliminating prejudices.

If step one and step two are successful, then the next thing the advocate for the gifted needs to consider is the process used to identify the children. There are a number of good commercial identification instruments. The only disadvantage many of these instruments has is that they depend upon initial teacher identification. Too often the average classroom teacher has a tendency to pick out those students who always do what they are supposed to do and who conform to school rules. These children may be gifted; they also may not be gifted. At the end of this article there is a check list of twenty attitudes, actions or work habits often exhibited by the truly gifted child who is not doing well in the regular classroom. Many of these characteristics are negative, and because a child exhibits one or more of them certainly doesn't guarantee he/she is gifted. However, they are worth thinking about. Too often this truly gifted child is overlooked by the classroom teacher.

The key to any gifted program is the teacher. If the gifted child is to enjoy success in the regular classroom, then the teacher must be sympathetic and empathetic to the needs of the gifted. This means a teacher must have some special training and must be convinced that special lessons are absolutely necessary for these very bright children. No teacher should ever be forced into the role of teacher for the gifted. No teacher should ever take a job teaching gifted children, thinking it will be easy, because "all the kids are smart." Teaching the gifted, on a continuing basis, is highly demanding and extremely difficult.

Finally, once the program is planned and teachers chosen, find out how teachers plan to implement the program. Concerned parents, teachers and administrators must assist the teacher, or the job becomes impossible.

The classroom teacher already has huge demands upon his/her time. Without assistance from concerned advocates, he/she cannot adequately prepare for and teach the gifted. Help may come in the form of volunteer parent aides, in the classroom, typing or correcting papers in the evening. Other teachers can assist by volunteering their expertise in specific areas. Administrators can assist by assigning the paid Aide to assist the teacher and by excusing the teacher from some of his/her other responsibilities. These kinds of assistance are vital, if the teacher is going to succeed with his/her additional responsibilities.

While there is no substitute for special programs for the gifted, if they are not available, it is absolutely vital that provisions be made for these bright children in the regular classroom. The task is not easy, but it can be done with proper planning and careful preparation.

MYTH OR FACT?

1. Gifted children are peculiar.

   True ___ False ___

2. Gifted children have poor coordination.

   True ___ False ___

3. Gifted children do better in school than their less gifted peers.

   True ___ False ___

4. Gifted children do not have a great need for special programs, because their giftedness helps them get what they need in school.

   True ___ False ___

5. Gifted programs are not necessarily good because they foster a sense of isolation and elitism.

   True ___ False ___

6. Teachers of the gifted have an easier task then the regular classroom teacher, because the IQ span is not as wide.

   True ___ False ___

7. Gifted children are often termed as loners, because they prefer a great deal of "alone time."

   True ___ False ___

8. Gifted children have excellent self concepts.

   True ___ False ___

9. The gifted child grown up will probably contribute more to society than his less gifted peers.

   True ___ False ___

10. Special programs for the gifted harm the regular classroom, because they remove the best leaders and best students.

    True ___ False ___

PROBLEM OR PRODIGY?

Do you know a child who falls into some of the following categories? Could this child be gifted? Examine the twenty statements. Write down the names of those children who seem to fall in any of the categories. Do a cross check. If one child's name appears several times, consider the possibility that the child may be gifted. The truly gifted child seldom is the one who wins favor with his/her teacher and peers. The written work of the gifted child is often deplorable, as are his study skills. However, if this child is identified as gifted, and he gets the kind of instruction he needs, he can become an asset to his class and a happy, well-adjusted child. Left to his own devices, he becomes the early drop-out, despised by his peers, the bane of the school system and, worst of all, he comes to hate himself.

1. Appears to pay little attention in class					
2. Has trouble getting along with peers					
3. Asks questions, many of which seem irrelevant					
4. Is extremely verbal but has "sloppy" work habits					
5. Is often late turning in work					
6. Plans projects on grandiose scale which never materialize					
7. Interupts teacher in rude way during class discussions					
8. Questions authority					
9. Has strong sense of right and wrong					

10. Seldom participates in class activities					
11. Seldom does required work without a "hassle" with teacher					
12. Reads constantly					
13. Appears to be able to do several things at once					
14. Is interested in only one subject					
15. Is considered "strange" by peers					
16. Seems emotionally immature					
17. Identifies better with adults than with peers					
18. Complains that school is boring					
19. Has attention span which varies					
20. Exhibits extreme sensitivity					

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SURVIVAL SKILLS FOR THE DISADVANTAGED GIFTED

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It is important that the disadvantaged gifted student be given life related education which will prepare him for and more than ensure his success in life. Life related materials, which put emphasis on real world experiences outside of the classrooms, are needed for all students; however, the gifted disadvantaged student's needs demand top priority.

The next decades will witness an increased reliance upon automation, computers, verbal and non-verbal communication skills, and self assuredness. The gifted disadvantaged child will need to possess much more than a high IQ score in order to succeed in life. Charles Cheng, in a posthumously published article, quotes Bowles and Gintes as saying that neither the level of cognitive skills nor IQ scores account for occupational attainment. The gifted minority student's world and life will be highly competitive, and he will need all the tools necessary to compete.

Thomas Hunt points out that it has long been the belief that American public schools serve as ladders by which an American child can, if he possesses the intelligence and fortitude, climb to success and acceptance. This belief may hold true for a large number of Americans in the dominant culture; however, the gifted disadvantaged person will not find a world eager to embrace him and give him excessive opportunities unless life related materials and exposure are provided along with development of higher level cognitive skills. Cheng further acknowledged that there is a belief that education provides an important avenue for upward mobility. Yet, a number of studies provide no clear evidence that access to higher status jobs (through education) has been equalized. That is a particularly valid point for minority disadvantaged gifted young people who are ready to step out of the schools. Today, employers complain that too many students lack the necessary skills to function competently in the everyday work world. They point out that too many who possess high academic credentials lack the ability to translate theoretical skills into realistic execution of ideas. True, a gifted child will not be classified, in most instances, as a functional illiterate; but he may lag behind unless the schools take the time to build those life-related survival skills.

The purpose of this workshop, then, is to demonstrate differentiated instructional techniques for the teaching of survival skills to the gifted disadvantaged students.